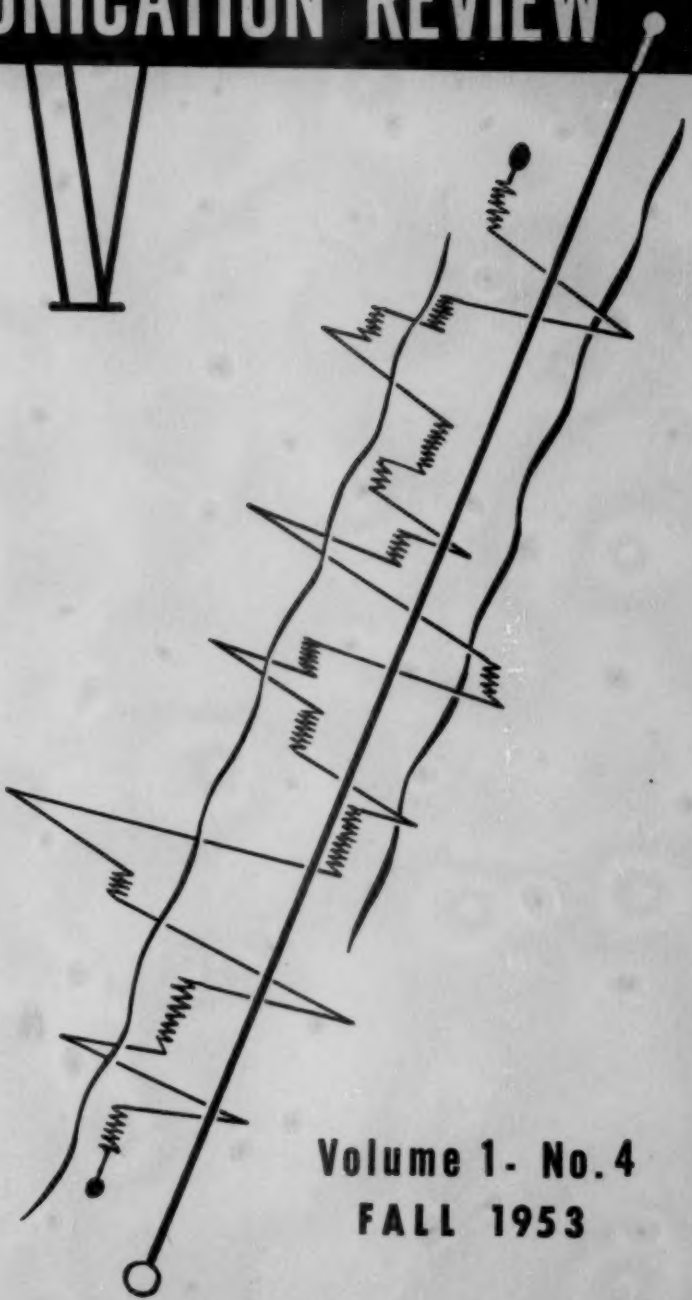
AUDIO VISUAL COMMUNICATION REVIEW



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ON A GENERAL THEORY OF COMMUNICATION

● KENNETH HARWOOD

● FRANCIS CARTIER

Here is presented an overview of the many approaches to the study of human communication and preliminary notes on the formulation of a generalized theory of communication.

Dr. Kenneth Harwood is Professor and Head of the Department of Radio and Television in the University of Alabama. Dr. Francis Cartier is Assistant Professor of Speech in Florida State University and Editor of the Journal of Communication.

Recent developments in several areas of study tend to underscore the need for a general theory of communication. The communications revolution of the nineteenth and twentieth centuries has now progressed enough to provide us with the beginnings of a coherent theory of information. Within the past few decades, the social sciences have begun to grow away from their age-long use of folk-methods and piecemeal empiricism. Literary criticism has begun to shift from its classical practice of categorical comparison to interpretations of communication content using more general and less-compartmentalized concepts.

To the worker in any one of these areas, developments in related areas may seem almost incomprehensible and only vaguely applicable to his own work. From the area of the natural sciences come the concepts of entropy in communication (21, 18), the logon, the metron, etc. (20). Social sciences contribute views of communication in human affairs such as field theory (11), intercultural studies (19, 16), action theory (13), content analysis (10, 1), and effect analysis (8). Letters and humanities contribute materials as seemingly diverse as studies of linguistic function (4, 17, 3) and rhetorical criticism (5).

With such varied and promising paths before us, it seems almost intolerably wasteful for us to follow the example of the man who, in Stephen Leacock's story, mounted his horse and rode off furiously in all directions. Unless these various activities in the study of communication

can be seen as parts of a larger concept, the very diversity of the communication researcher's interests, as compared with his individual capabilities and the amount of study he may devote to each area, threatens to make of him little more than a professional dilettante. At this stage in the history of our culture, there seems to be a greater necessity for a general theory of communication than ever moved Newton to formulate his statements about motion and matter or urged Einstein to generalize Newton's work. In the face of such necessity, it seems reasonably certain, if the history of ideas is some guide, that we shall have a general theory of communication. Likelihood that a suitable theory may be formulated within our lifetimes has been increased considerably by the work, during recent years, in linguistics, content analysis, communication theory, and other areas of study.

And we need such a unified philosophy of communication as a context for devising and conducting particular research projects. When a researcher conducting a study is aware only of its importance to his own specialized field of interest, he cannot, for one thing, be sufficiently longsighted to draw all the conclusions from his data that they warrant.

But more importantly, and this is true of *any* broad research area, a general theory is necessary for the initial orientation of research and as an intellectual environment from which hypotheses may be drawn.

Furthermore, it is required for full understanding of the data we already have from past research. It is no use acting as tho Black's research in intelligibility (2), Aristotle's study of rhetorical principles, and the Hanover Institute studies of perception (12) have something in common which makes them important to students of communication unless we can show *what* they have in common and *why* one is relevant to the other.

Take another example. At present there is no logical structure that will immediately clarify the relevance of Shannon's information-theory approach (18), to epistemological statements about information, or, to take still another example, that will relate the idea of entropy in language to the principle of least effort in language (22).

If a general theory of communication is to be formulated, by what tests shall we judge it? Tradition and philosophy make certain normal demands.

First, under Ockham's razor, the best general theory of communication is that which most simply and parsimoniously states what is acceptable.

Second, at the suggestion of John Stuart Mill, the theory should be of such nature as to be either proved or disproved by comparison with the observed facts.

Third, if the theory cannot be verified directly, it should be so stated as to make its products derivative from mathematical or other deductive processes.

Fourth, the theory must certainly subsume the widest possible range of phenomena and predict their course with least possible error.

Finally, and most importantly, the theory must be so stated as to attract not necessarily the largest following but surely the most penetrating intellects in the related areas to which it applies.

Let us attempt to visualize what a general theory of communication might be like.

Communication, like all human functions, has an end or desideratum. But for this discussion, we ought to try to avoid the type of thinking that specific examples may lead us into. It is all too easy to say that different acts of communication have different purposes and that therefore there can be no *generalized* desideratum of communication. Such thinking would lead us to make up a theory for each particularized function separately.

Any human function can be evaluated, in part at least, by measurement of the degree of attainment of its desideratum. For a generalized theory of communication, we must postulate a generalized desideratum, that is, a rationale for the existence of communication. This will be an anthropological concept perhaps. Or a sociological concept. Possibly a mathematical concept.

We believe that it would be profitable to search for this generalized desideratum of communication in the generalized concept of freedom. There are strong arguments in favor of building our generalized theory around the proposition that communication as a human function has a generalized purpose which can be defined in terms of freedom. What we are saying is simply this—that, when we communicate, our reason for doing so has something to do with freedom, and that furthermore, freedom is involved in the way we go about it.

Now that is a fairly conservative statement of our present views. But it does give us the responsibility of devising or discovering a definition for a general concept of freedom. We may well look first to mathematics for this, for mathematics contains some of the most generalized concepts to be found in science and philosophy.

It becomes clear at once that the most common of modern statistical technics, such as chi square, Student's t-ratio, and analysis of variance, depend for their usefulness upon a concept of freedom. To interpret these statistics, it is necessary to know the number of degrees of freedom in which they operate. If there is but one way of doing something, you have no freedom of choice in the way you do it. If there are two ways, you have one degree of freedom of choice; if there are three ways,

you have two degrees of freedom, and so on. The rule is that the number of degrees of freedom is one less than the total number of choices at hand. This way of measuring freedom is simple enough to warrant its application to other areas in which freedom is an important concept.

Indeed, this particular concept of freedom has become central to information theory, because statistical work has been the basis for applying ideas about thermodynamic entropy to information. Information theory describes information as negative entropy, which simply means that the more you restrict the irrelevant parts of a message, the more information you pack into that message. Your freedom to toss anything at all into the message decreases your chances of putting the most information into it. As your freedom to put anything in the message *de*creases, the chances that you will put the greatest possible amount of information into the message *in*crease. Without this concept of freedom, what we know as information theory would not exist.

In addition to the mathematical concepts of freedom, we have other definitions of freedom stated in mathematical terms.

Social freedom has been defined as the ratio of the sum total of the means to satisfy our desires to the sum total of our desires. (Note the close similarity of this definition of freedom to those that apply in statistical odds and in information theory.) Following this line of reasoning, economic freedom has been demonstrated as the ratio of the amount of work a person can do minus what he has to do to satisfy his desires, to the amount of work he can do. According to this definition, the less work a person has to do to satisfy himself, the freer he is. Further development of this thesis shows that capital represents a reserve of economic freedom—a reserve which is the result of putting less into an economic system than you desire to take out of it. Political freedom, in turn, may be expressed in a similar ratio (15).

Some *psychological* concepts of freedom have already been the subject of considerable study. Ruesch and Bateson (16) and others give us support for extension of the general idea of freedom into the psychology of communication, particularly as regards the limitation of freedom by inhibition and prejudice.

Other psychological concepts of freedom give rise to such questions as: If freedom is measurable as the number and value of the choices open to an individual, does a large vocabulary imply greater associational freedom? And what, for example, would this imply about the fact that vocabulary tests frequently correlate quite well with other measurements of intelligence?

And what of artistic communication? Does it seem improbable that a useful theory of artistic creation and experience could be based on concepts of freedom? Nearly all the existing aesthetic philosophies

appear to include such a concept, altho with varying labels and importance.

Certainly, then, there are differences, but there seems to be a common factor in the various concepts of freedom. We know this intuitively and by the fact that the word "freedom" seems to apply to each one. This common factor is most simply stated in the mathematical definitions. These mathematical definitions are of special importance to us because they may provide a rationale for integrating communication as natural science, with communication as social science, with communication as arts and letters.

Plenty of questions arise when we attempt to construct this generalized theory of communication. Let us mention just a few: (a) Has information theory struck upon as fundamental a principle for our understanding of human communication as it has for our understanding of mechanical communication? (b) Communication is obviously an essential function in the establishment of the "togetherness" and rapport we call friendship. Might we learn something about communication by an examination of the rhetoric of friendship? (c) Is there a yet-to-be-discovered psychological correlative of the informational bit, just as loudness is the psychological correlative of intensity? (d) Are freedom and power different names for the same thing? (e) Is it proper to say that interest is latent attention and that attention is interest in action? If so, what does this imply about rhetoric, about listenability, about drama? (f) Do we actually "give" information when we communicate, or are we only influencing the listener's attention to rove to already-established memories in a sequence which will allow him, so to speak, to discover our message within his own experience?[1] And by the way, (g) what is memory? And (h) attention? And so on and on.

Now, a summary and a final word. There is a definite need—very nearly a necessity—for a general theory of communication to pull together the many profitable but philosophically isolated special theories like those of Shannon the mathematician (18), Burke the rhetorician (5), Wiener the cyberneticist (21), Korzybski the semanticist (9), Sapir the linguist (17), Potter the phonetician (14), Flesch the stylist (7), Ruesch the psychiatrist (16), and Zipf the ecologist (22).

A general theory of communication would also provide a context for individual research projects, past, present and future, and a logical system for the development of hypotheses upon which to base future research.

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[1]The writers developed a general definition of communication in a paper presented to the Southern Speech Association at Greenville, S. C., in April 1953. This paper appeared in the November 1953, issue of the *Journal of Communication*.

We have suggested that a general theory of communication requires a general definition of communication and that examination of the mathematical concepts of freedom may be rewarding in this respect. That freedom is a biological, evolutional, anthropological, political, ethical, aesthetic, *and* mathematical concept seems to be relevant to the suggestion. Freedom appears to be a generalized human desideratum. Communication appears to be essential to the attainment of most human desiderata. That communication is fundamentally concerned with freedom should add impetus to the quest for a general theory.

We believe with Dewey that there can be no distinction between philosophy and science (6). If we are to progress in either, we must progress in both. We therefore wish to stress the necessity not only of intensified specific research, but of intensified effort to construct a rationale, a theory, a philosophy of communication.

Probably, a general theory of communication will only come into being as part of a new general metaphysic. And if, as Burke (5) has been saying for some time, nearly all human activity is rhetorical, a general theory of communication will be a very large and important part of such a metaphysic. A general theory of communication, then, may well deserve the label of meta-rhetoric.

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AUDIO-VISUAL RESEARCH: WHERE TO FIND IT

● JAMES S. KINDER

In this article James S. Kinder assembles a much-needed listing of sources of audio-visual research. Dr. Kinder is Coordinator of Audio-Visual Services in San Diego State College, California, and author of Audio-Visual Materials and Techniques.

In a recent article entitled, "Professionalizing the Audio-Visual Field," James D. Finn says, "The most fundamental and most important characteristic of a profession is that the skills involved are founded upon a body of intellectual theory and research. Furthermore, this systematic theory is constantly being expanded by research and thinking within the profession. As Whitehead says, '...the practice of a profession cannot be disjoined from its theoretical understanding or *vice versa*.... The antithesis to a profession is an avocation based upon customary activities and modified by the trial and error of individual practice. Such an avocation is a craft....'" (11:8)

Research in audio-visual materials and technics is important—more important than many practitioners believe. Without research, audio-visual educators are reduced to gadgeteers and cannot qualify as professional educators. It is only thru research that hypotheses are validated. Science and medicine would be little more than quackery without research; they would still be in the days of black magic and alchemy. "Hunches" must give way to scientific law. Modern industry, no less than the professions, checks its processes, materials, and products. The research laboratory is an integral and accepted part of every industry. Car manufacturers, we are told, never place a new model on the market until it has been tested and retested under exacting conditions—conditions not unlike those to which owners will later subject their cars.

This article will give an over-all picture of research in audio-visual education, but will not attempt, because of space limitations, to spell out specific research findings. Teachers and students will be astonished at the volume of audio-visual publication, not all of which is research, but

all add, nevertheless, to the development of the field. Each piece of research, no matter how small, helps fill in the history, background, and setting of the profession as it exists today. Even individual reports, summaries, surveys, personal experiences, panel discussions, and minor utilization descriptions have their place in the body of growing literature. This sort of documentation is necessary in every scientific field, and gives healthy assistance to more exacting research.

Summaries and Compilations of Researches

Before 1935 most of the researches in audio-visual education were scattered and often obscure. Students interested in the early researches will find most of them listed in five references: Freeman (13), Johnson (18), Wood and Freeman (41), Weber (37) and McClusky (26).

The first attempt at a truly definitive compilation of a-v research came in 1937 with a publication by Dale, Dunn, Hoban, and Schneider under the title *Motion Pictures in Education* (7). This compilation went beyond a mere listing of researches, speeches, convention topics, surveys, etc.; it categorized and summarized the listings. The work was started as a Works Progress Administration project, but was later taken over and completed by the American Council on Education, Committee on Motion Pictures. In large measure, the value of this work today is historical.

Since 1940, there have been numerous bibliographies and syntheses of audio-visual research. In 1946, Carroll (5) briefly surveyed the literature in his book entitled *Teacher Education and Visual Education for the Modern School*. Another short summary limited to films in education appeared as a chapter in *Film and Education* edited by Elliott (9). A useful and generally available summary of researches up to 1949 can be found in the *Encyclopedia of Educational Research* (30). Constance Weinman (38) put together an extensive bibliography specifically for teachers in the elementary field.

One of the most helpful summaries of the major investigations involving audio-visual materials, their production, utilization, and administration, was published in 1949 as a chapter in the Forty-Eighth Yearbook, Part I, of the National Society for the Study of Education (8). In this chapter Dale, Finn, and Hoban discussed the accumulated audio-visual researches under eight major headings and included a bibliography of 163 listings. The authors made it clear that audio-visual materials and technics are not just so much "eye" or "ear" sense stimuli, but "they are modern technological means of providing rich, concrete experiences for students."

Students of audio-visual research will find that the NSSE yearbook gives a comprehensive analysis of research findings in instructional and

theatrical motion pictures, field trips, slides and still pictures, museum materials, graphic materials, radio and recordings, and the use of a-v materials in the Armed Forces. The analysis of the instructional film includes discussion of the values of films with respect to utilization purposes (retention, motivation, factual learning, skills, habits, imagination, etc.). Further discussion centers around use of films with "bright" and "dull" pupils, effectiveness at various grade levels, frequency of showings, auditorium vs. classroom utilization, and types of verbal commentaries.

In 1950 McClusky (25) brought together the most definitive bibliography of audio-visual research and writing which has yet been seen. This bibliography listed and annotated 3115 published writings. The bibliography was arranged in eight parts: "Philosophy and Practice of Teaching with Audio-Visual Materials, Audio-Visual Teaching Materials and Their Use, Elementary Schools, Secondary Schools, Higher Education, Administration of Audio-Visual Instruction, Research on Values and Utilization of Audio-Visual Materials, and Miscellaneous Uses," including such areas as the Armed Services, Adult Education, Rural Schools, International, Mental Hygiene, Public Libraries, and Religious Education. Students and teachers have found this book indispensable and a practical time-saver.

Also, in 1950, Hoban and Van Ormer (16) undertook to "summarize, evaluate and integrate three decades of research" solely on the instructional film. All other aspects of audio-visual materials and technics were dismissed from consideration, yet the bibliography in this summary of experimental instructional-film studies totaled 296 for the period of 1918 to 1950. By and large, the entries in this summary represent the best in instructional-film research. The researches were closely scrutinized, then classified and discussed under these headings: "Instructional Objectives: Imparting a Knowledge of Facts," "Instructional Objectives: Teaching Perceptual-Motor Skills," "Instructional Objectives: Influencing Motivation, Attitudes, and Opinions," "Instructional Values of Films Compared with Other Media and Methods," "Audience Characteristics," and "The Rhetoric of Film Instruction: Variables in the Production and Use of Films." A few of the researches included in this summary made available by the Yale Motion Picture Research Project and The Pennsylvania State College Instructional Film Research Program had been hitherto unpublished.

In the same year, as part of an address before the Fifth Annual Audio-Visual Conference at San Diego State College, Kinder (19), speaking on the topic "Improving Classroom Instruction Through Audio-Visual Research," commented at length upon the researches of the late 40's. In the main, emphasis was placed on research in four areas: "(1) general

gains from film utilization, (2) effectiveness of variations in presentation, (3) values of different media, and (4) variations in the structure of the media."

The above bibliographies, summaries, and collations of a-v research give a complete picture up to 1950. Since 1950 there has been no summarization or collection of any scope. Researchers can bring their audio-visual research pattern up-to-date by consulting studies sponsored by the Armed Forces at Pennsylvania State College (35), Yale University (42), and projects of the U. S. Air Forces' Human Factors Operations Research Laboratories (23), studies sponsored by Teaching Films Custodians and the Motion Picture Association (24), the Nebraska project (29), the Hanover Institute experiments (31), and the work of numerous individual researchers. Little reference material bearing on educational television will be found in any of the sources already named. There has been, however, one recent comprehensive review of educational television research. This 1953 publication by Finn (12) lists 54 references in the new and rapidly expanding communications medium, most of them research studies.

Textbooks

Most of the textbooks and supplementary books in audio-visual education make a point of mentioning much research. These books have been written for preservice and inservice teachers in the main and their content is more or less documented by the professional research which has been done in the field. A few of these books, in the order of publication, are: Hoban (15), Dale (6), Elliott (9), McClusky (27), McKown and Roberts (28), Weaver and Bollinger (36), Kinder (20), and Wittich and Schuller (40).

Journals and Newsletters

There are a number of journals which serve the audio-visual field specifically and which have regularly scheduled dates of publication. Altho these journals publish a heterogeneous mass of articles dealing with convention topics, addresses, surveys, production notes, and articles of an omnibus character, they also carry serious scientific research articles. Since most of these journals are rather well known, it will suffice merely to mention them—*Educational Screen, Audio-Visual Guide, Film News, Jewish Audio-Visual Review, Business Screen, See and Hear, Ohio State University Newsletter, Film World, Audio-Visual World, Journal of AERT* (Association for Education by Radio-Television), *Teaching Tools,* and *Audio-Visual Communication Review.* The last two of these magazines are so new that they are in their first year of publication. *Teaching Tools* is essentially a how-to-do-it magazine. *Audio-Visual*

Communication Review is a quarterly published by the Department of Audio-Visual Instruction of the National Education Association, emphasizing research and investigation.

In addition to the journals listed above, nearly all major educational magazines carry an occasional audio-visual article. Some of them devote a section of each issue to the a-v field, often the magazines have a specially designated audio-visual editor. Only four magazines of this type will be specifically mentioned—*Instructor, Review of Educational Research, School and Society,* and *Phi Delta Kappan.*

Instructor, designed particularly for teachers of the elementary school, has for years featured audio-visual materials with a well-known educator serving as editor. Most of the articles in this journal are of a practical nature beamed directly at the classroom teacher.

The editorial board of the *Review of Educational Research* has a policy of rotating 12 major educational areas for inclusion in its various issues. Research in audio-visual education has, therefore, been summarized periodically. The first summary was prepared in 1942 by Kinder (21) with a chapter entitled, "Visual Aids in Education," including a bibliography of 78 items. Another chapter in the same issue by Seerley Reid and Daniel Day (32) listed 169 researches pertaining to radio and records. Appropriately enough these summaries were included in the journal's issue entitled "General Aspects of Instruction, Learning, Teaching, and the Curriculum." In 1945, the journal carried a second summary of a-v research. This one was prepared by Stenius (33) and combined both audio and visual materials and technics. Stenius included a bibliography of 62 items. In 1950, the journal included a specialized summary of audio-visual articles in adult education by Svenson and Sheats (34). These writers listed a bibliography of 87 items. No comprehensive summary has appeared in the *Review* since 1950, but Brink and Jamrich (4) devoted two pages of their chapter on "Teaching Materials" in the 1951 issue to audio-visual media.

School and Society regularly carries a column devoted to a review of educational literature. Twice W. W. Brickman (3) has reviewed the major audio-visual literature. Altho this column makes no pretense of covering all the literature in the field, it does summarize and critically evaluate dozens of the more outstanding publications.

In recent years, the *Phi Delta Kappan* has annually carried a section entitled "Doctors' Dissertations Under Way in Education," compiled by Carter Good or R. L. Hunt (14). The issues of 1950, 1951, and 1952 listed respectively 36, 23, and 27 theses in audio-visual education under way at various colleges and universities in the United States. These lists are highly informative and give insight into the types of audio-visual problems being investigated in the graduate schools around the country.

Unpublished Bibliographies

Nearly every college and university professor offering courses in audio-visual education (especially graduate courses) has of necessity collected bibliographies and collations of research in the field. These collections have great functional value. An excellent example of these collections is one in the files of Lee Cochran at the University of Iowa. Three graduate students at Iowa have prepared these bibliographies as follows: (1) Harry M. Kaufman, *Audio-Visual Bibliography, 1940–1947.* (2) Benjamin B. Davis, *Audio-Visual Bibliography, 1948.* (3) Robert J. Hansen, *Audio-Visual Bibliography, Nov., 1947–June, 1950.* (4) Robert J. Hansen, *Audio-Visual Bibliography, June, 1950–May, 1951.* All four of these collections follow the same pattern breaking down the researches into some 40 categories. These collections are extensive and include much college material not generally indexed in standard sources.

The array of research outlined above provides the teacher, student, administrator, or researcher with a bookcase of studies which are invaluable. This writer agrees with Allen (2:57) that there is no paucity of published research in this field.

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DETERMINANTS OF AUDIENCE REACTION: STATUS

● CHARLES F. HOBAN

Continuing a discussion introduced in the Winter 1953 issue of Audio-Visual Communication Review, *Charles F. Hoban considers the effect of audience status upon reactions to training films.*

Dr. Hoban is Senior Research Investigator on a research program at the University of Pennsylvania.

Among the factors that influence behavior in group situations is that of status. Status is the position of the individual in the structure of the group or community. This article reports some data, gathered in inservice film evaluation studies of the Signal Corps, on the influence of status on audience reactions to training films.

Film research has, on the whole, followed the safe, classical, and sometimes sterile constructs of learning theory, and the vested procedures of teaching and training. It has tended to shy away from the dynamics of interaction of the audience with what is represented on the screen. Consequently, little is known of the influence of status on audience reactions to a-v communication.

The remarks of Dana Farnsworth to the committee which prepared the recently published report on *General Education in School and College* are pertinent to communications research as well as to formal education:

> I believe that real progress can be made in the next few years if the attention of educators is focussed to an increasing degree on the relationships between emotions and learning; on feeling as well as thinking, and on the unconscious factors that operate either favorably or unfavorably in the teaching process. The tendency for educators to avoid such matters is readily understood, but this field cries out for additional emphasis and study (2:101).

Status is a construct used by sociologists and other social scientists who deal with the influence of social structure on interpersonal behavior and on institutional operations. The status occupied by an individual, or to which he aspires, frequently defines for him his speech pat-

terns, his wardrobe and the way he wears it, the make and model of his car, his church affiliation, if any, the neighborhood he is free to live in, and the like. We are all personally familiar with changes in behavior of this sort that accompany changes in professional position and institutional affiliation. We are also familiar with the standardization of behavior in a given institution or social group.

These behavior patterns are symbols of status and status is a symbol of success. In a mobile society such as ours, status even more than dollar income is the measure of the worth of the individual. Much of this, of course, is morally indefensible, but moral values have hard sledding in a turbulent social milieu. More the pity.

Researches Involving Status

The distressing consequences of family status on high-school careers of adolescents in the small, midwestern community of Elmtown (pseudonym) has been reported in intimate detail by Hollingshead (4). Doubt that status is a determinant of the institutional operation of at least one public school system has been removed by this painstaking report. Status-sorting started early in the lives of Elmtown's youth. The community high school, responding to the community power structure, operated to increase the efficiency of the divisive process.

Another publication bearing on the problem of status is Mills' (8) recent book on what he calls the "white collar class." He devotes a chapter to the status panic of this occupational class of workers. Mills includes school teachers and college professors in his "white collar class" and discusses people of this profession in terms they are not likely to appreciate. Among other things, he says:

> The type of man who is recruited for college teaching and shaped for this end by graduate school training is very likely to have a strong plebeian strain. His culture is typically narrow, his imagination often limited. Men can achieve position in this field although they are recruited from the lower-middle class, a milieu not remarkable for grace of mind, flexibility or breadth of culture, or scope of imagination (8:129–30).

It is clear from a reading of Mills that status is a determinant in the behavior of those who teach as well as those who are taught. This does not apply blanketly to the individual teacher or school administrator. Status operates as a determinant of teacher behavior in the sense that it has a probability value in the behavior of a group, or aggregate, of individuals, homogeneous in occupation.[1]

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[1]Thruout this article the term *determinant* is used to indicate a probability in the behavior of an aggregate of individuals. It is not used to signify an inexorable force beyond control of the human will.

The influence of superstructure status on control of power and decision in community affairs has been reported in considerable detail by Hunter (6). This study documents aspects of community control not widely or well understood by all who live with and are subordinate to the community power structure. The Pasadena case is an example of the seizure and use of institutional power by a small, hard-working plutocracy, composed in the beginning, as Hulburd indicates, "of a number of people who, if not exactly the community's leading citizens, were certainly representatives of its main street" (5:56).

Status is a construct not easily dismissed in communications research. In his discussion of problems of organizational communication, Whyte comments that "It is not in the symbols of status nor in the codes or allegiances...that the trouble lies. It is in overlooking the tremendous effect that they have on communication" (11:110).

Status and Audience Reactions

Ramseyer (9) reported some data which indicate that status probably operated in audience reactions to documentary films produced by the federal government during the New Deal era. Shifts in attitudes toward WPA and government assistance in soil erosion control, following film showings, were most reliable among those boys and girls whose parents were farmers, laborers, and white collar workers, and least reliable among children whose parents were professional workers.[2]

These differences in audience reaction are predictable if we assume that family occupational status is a component of an attitude toward gov-

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[2]In his study, Ramseyer dealt with audience reactions to *what was represented* in the films. It is important that the distinction between the act-of-representation and what-is-represented be kept in mind. One convenient method of making and preserving this distinction is to use the communications terms of *message* and *code*. The term *message* is used to indicate the content of a-v communication, and the term *code* to indicate the treatment (story, casting, sets, direction, dialogue, and the like used to transmit the message. Such a distinction is useful at this time, particularly in field tests and evaluation studies of motion pictures and TV programs.

There is reason to believe, however, that this distinction will soon prove inadequate to the task of a-v research. In one recent film evaluation study with which I have been associated, the data indicated that the code used in transmission of the message was a strong determiner of audience interpretation of the message, i.e., the code itself carried a message relatively independent of the message both the sponsor and the producer intended to transmit.

Important research now being carried on in the psychology of representation by James J. Gibson (see A. A. Lumsdaine's article in Vol. 1, No. 2 of this *Review*) at Cornell University may shed light on the problem of the message-carrying capabilities of the form of representation in pictures and sound. Research on representation conducted at the Hanover Institute was carefully and critically reviewed by Kenneth Norberg (see Vol. 1, No. 1 of this *Review*). Norberg's review is now a classic reference for the student of a-v communication.

ernment activity in the conservation of natural and human resources. Recent change in political administration in Washington invites attention, once again, to the role of the federal government, the private corporation, the state government, the local community, and the individual citizen in the conservation and administration of the nation's basic resources.

Sturmthal and Curtis (10) in their study of audience reactions to a film on technological unemployment, reported some data which indicate that audience status was a determinant of a commitment reaction to various scenes and sequences in the film. They reported that members of the audience who had been unemployed at least three months stood clearly above other members of the audience in their like-dislike responses to sequences which represented the effect of unemployment on people.

Sturmthal and Curtis also reported that this segment of the audience tended to be wary of committing themselves to positive responses to the film representation until they perceived the slant or bias of the film. Once the bias was clear, they expressed their "like" responses ahead of those in the audience who had not experienced a recent and prolonged period of unemployment.

Here, again, status appears to have entered into reactions of the audience to a film representing situations closely related to the status of the audience. The communication pattern, i.e., the response to representation, was apparently different on a like-dislike level for those recently unemployed and for those not recently unemployed.

Kishler's (7) study of audience reactions to *Keys of the Kingdom* adds further illumination to the hypothesis that status is a determinant of audience reaction to a-v communication. His study deals not with status, as such, but with prestige, which is associated with status somewhat as an attribute.

Prestige, like status, has to do with self-esteem, and with values close to the central core of the self. As Mills points out, "The level of self-esteem enjoyed by given individuals is more or less set by...[the] status system" (8:239). Prestige, however, is more shifting than status. It is frequently claimed on one critereon and honored on another.

Kishler predicted that those in the audience for whom the role of Catholic priest had a high prestige value would learn more facts from the film and change their attitudes in the direction of greater religious tolerance than those for whom the role of Catholic priest had low prestige value. In the matter of information gains, the evidence was unreliable, altho in the direction predicted. On the religious toleration scale, results were more consistent with the predicted pattern of behavior. Both low-prestige and high-prestige groups shifted attitudes in the direction of greater religious tolerance, but the shift of the low-prestige group was .09

on an 11-point attitude scale, and statistically unreliable; whereas, the shift of the high-prestige group was .18 on an 11-point scale, reliable at the 2 percent level of confidence.

Religious tolerance is a complex behavior pattern, involving a fine line between charity toward fellow men and strength in fundamental creed. People who hold the role of Catholic priest in high esteem may or may not be susceptible to the group-think, team-play imperatives that often pass under the name of extreme religious tolerance, akin to doctrinal indifference. Consequently, any reliable increase in religious tolerance following the film showing may or may not be more significant of the influence of prestige on reaction to the film representation than the tests of probability indicate.

There is, in these reported studies of audience reactions to films, both direct and indirect evidence that status acts as a determinant of audience reactions to a-v communication. The principle governing the operation of status in communications situations involving film representation is not yet clearly defined or adequately described. Lack of clarity is due, in part, to the tendency toward empiricism in film research without benefit of its well-ordered, systematized aspects.[3] As Conant points out, when "new principles evolve which can be related to empirical observations; at that point it becomes possible to control with far greater accuracy than before what one is doing in the practical arts and to predict the outcome of a large-scale operation directed towards making a commercial product" (1:48).

Evidence From Evaluation Studies

Some new data on the influence of status on audience reactions, reported below, come from field tests, conducted by the Signal Corps under actual training situations, of films produced by the Signal Corps Pictorial Center for Army training. It is at once a mark of distinction of the military services and a reflection on the producers of films for school, college, and adult education, that inservice film evaluation is an activity relatively unique to the armed forces.

Evaluation is essentially a feed-back process. While used for other purposes, notably in the struggle for institutional hegemony and control, evaluation is a basic component of a communications system. Its function is to observe errors in message transmission and to feed correction data back to the transmission agency, the information source, or the message

[3]The reader's attention is invited to C. R. Carpenter's systematic formulation of a series of hypotheses on a-v communication (see Vol. 1, No. 1, this *Review*) as an example of the evolution of new principles related to empirical observations of film research.

destination, as appropriate. Unfortunately, in the hegemony struggle, evaluation is used as a club with which those in ascendence beat those in subordinate positions over the head in order to force submission and/or change in personnel or operating procedures. The inglorious fate of the evaluator, and the decisions involved, have been discussed with deep insight and sympathy by Charles E. Hendry, director of the School of Social Work, University of Toronto (3).

One of the films evaluated by the Signal Corps was *TF 11-1752 How to Operate the Army 16mm Sound Motion Picture Projector Set* (discussed in Vol. 1, No. 1, this *Review*) and the other was *TF 30-1735 On Post Safety*, cited for its excellence by the National Safety Council.

In the film on the Projector Set, an off-stage voice was used as an audience protagonist to raise questions on the operation of the set, not adequately answered in the preceding explanation, or not answered at all in the film. This voice was identified as the Voice-from-the-Gallery. It was cast after the fashion of William Bendix' interpretation of Chester Riley in *The Life of Riley*, a TV series. From the diction, it was evident even to the hard-of-hearing, that the Voice-from-the-Gallery was not the voice of the crew-cut valedictorian of the class of '50 of Ivy-League College. In the use of this Voice, the question arose whether the educational, and by inference the social, status of the audience would influence reaction to the Voice. Said another way, the question is whether the Voice impedes or facilitates communication with whom.

In the film, *On Post Safety*, one of the principal characters was Sergeant O'Malley, a fine noncommissioned officer in all respects except in his over-indulgent toleration of the chronically careless and accident-prone behavior of Pvt. "Hap" Harrison, the villain of the piece and close-friend of O'Malley. The result of this over-indulgence is tragedy where least expected. In the use of this characterization, the question arose whether military grade-status would influence the reaction of the military audience toward the representation of Sergeant O'Malley. Reworded, the question is how much O'Malley is in rapport with whom.

It is reasonable to expect that the dynamics of status will apply to a-v communication in much the same pattern, altho with perhaps less serious consequences because of the representational factor, as they apply to interpersonal communication within an organizational structure.[4] It has

[4] I am indebted to William H. Whyte, Jr. (11) and his chapter on "The Elusive Grapevine," for insight into the difficulties and barriers involved in upward communication in the status-system of an organization. Most of us are familiar with the details of these difficulties in our own institutional activities, but it takes the incisive observations of a Whyte to reduce the degree of empiricism of our own experiences, so that we can deal with phenomena in abstract terms, and apply these abstract terms to both our own experiences and those of others.

been observed in organizational studies that the difficulty of upward communication increases as it approaches the executive or top-status level. Individuals in high status position are, in effect, frequently out of communication with individuals of lower status.

In the representations involved in both training films, the symbols of low-status were evident. The aggressive, untutored diction of the Voice is symbolic of low social and educational status, and indulgent weakness in cases of personal friendship is symbolic of low status in the military command structure.

The relationship of social status, indicated by the amount of formal education of the trainees, and audience dislike reactions toward the Voice-from-the-Gallery, is shown in Table I.[5] The correlation between

TABLE I

EDUCATIONAL STATUS AND DISLIKE REACTIONS

Amount of Formal Education	Percent Expressing Dislike of Voice
Grade School Only (N = 19)	00
Some High School (N = 42)	10
Finished High School (N = 65)	12
Some College (N = 53)	30
Finished College (N = 36)	41

amount of education and percentage expressing dislike of the Voice is striking. Even more striking are the reasons given for the like-dislike reactions. Over 50 percent of those trainees who finished college prior to their military service categorized the Voice as "stagey," "stupid," "a wise guy," "silly," "lacking dignity," "sarcastic," "unnecessary," and the like. None of the trainees who had less than high-school training responded to the Voice in these terms.

Chi-Square analysis of the relationship between educational background and like-dislike reactions shows a relationship reliable on better than the one percent level of confidence, and a Coefficient of Contingency

[5]I am indebted to Col. Charles S. Stodter, chief, Army Pictorial Service Division, Office of the Chief Signal Officer, for release of the data reported in Tables I and II for publication. The inservice film-evaluation program was developed by the Signal Corps under Colonel Stodter's direction and with his continued encouragement. Release of the data for publication has the concurrence of the military establishment.

of .32. However, the percentage table, showing only dislike reactions, rather than a four-category scale of like-dislike reactions, is dramatic indication of the relationship of status and in-rapport communication, even tho the data in this table lack the statistical stability that more complex analysis provides.

A similar reliable relationship was found between educational status of the audience and interest rating of the film. A negative relationship (C = .33), could have been predicted on a status hypothesis because of the subjectmatter of the film. Operating a projector set is not exactly the kind of job the graduate engineer dreams-up for himself. Interestingly enough, no relationship was found between educational status and training ratings assigned by the trainees to the film.

In the case of the *On Post Safety* film, no relationship was found between education, or military rank, and either training or interest rating of the film. Again, this might be predicted from the fact that safety is a universal problem, not a status problem.

In both films, the judgment of the audience of the film in terms of its training value was independent of the social and/or military status of the audience. While status appears to enter into affective relationships, it also appears to have little influence on judgment of the objective value and usefulness of a communication.

The military audiences with whom *On Post Safety* was field tested were asked to indicate whether Sergeant O'Malley was the type of non-commissioned officer they (a) would like to serve with, (b) would not like to serve with, or (c) don't care whether they serve with or not. The would-not-like-to-serve-with response may be taken as indication of a communication barrier that reduces rapport between the audience and the screen representation. Audience responses on the rejection item are shown in Table II, stratified by military grade-status.

TABLE II

MILITARY STATUS AND REJECTION OF SGT.

Military Status	Percent Rejecting Sgt. O'Malley
Recruit (N = 29)	24
Private (N = 97)	22
Corporal (N = 55)	32
Sergeant (N = 57)	28
Commissioned Officer (N = 55)	52

In the rejection of Sergeant O'Malley as a type of NCO, there was linear correlation between increase in military grade-status and rejection of type. However, the difference in rejection of Sergeant O'Malley between commissioned officers (junior officers for the most part) and enlisted men, including noncommissioned officers, is evident in every comparison. This difference is even more evident when all enlisted men are thrown together in a single category. In this single category, there is a 26 percent rejection of Sergeant O'Malley by the 238 enlisted men.

The rejection reactions indicate, somewhat convincingly despite the small samples involved, that commissioned officers reacted with less rapport to the screen representation of Sergeant O'Malley than did those of servicemen in any of the lower grade-status categories.

It is well to remember that in neither of the two field tests did status appear to determine negative reactions of more than approximately 50 percent of those in the highest status category. The relationship of status and reaction to status-valued representation is far from one-to-one. About the best that can be said, at this stage of inquiry, is that some impedence of upward communication is found in a-v communication as well as in interpersonal communication. In a film, the upward transmission of the message is not easily cut-off by a series of relays, as in interpersonal communication, but some impedence is likely on the upper-status level of the audience when the film represents values associated with lower status position in the social structure.

Again, we see that a film is no magic gadget that insures transmission and reception of a message, pristine, noise-free, and 100 percent effective. Among other things, and under certain conditions, status acts as a determinant of reaction to, communication—even to a-v communication.

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A CONCEPTUAL FRAMEWORK FOR PROGRAMMING EDUCATIONAL TELEVISION

● RICHARD R. WILLEY

● F. J. VAN BORTEL

Many educators are suddenly being faced with the necessity of programming education television stations and feel the need for guidance. This article presents a rather original solution—a conceptual framework for television programming arising out of a series of discussions on the subject at the University of Chicago.

Dr. Richard R. Willey is Executive Assistant to the American Psychological Association. F. J. Van Bortel is currently completing his Ph.D. from the University of Chicago and is with the Committee on Human Development there.

Objectives

Television of any type swallows script, ideas, production facilities and talent at a staggering rate. Fortunately the educational and cultural centers of the country are in immediate possession of the only endless supply of raw materials for television programming, namely the arts and sciences of our civilization. These centers possess a virtually infinite number of ideas for effective programming if it is once recognized that the viewing audience of average Americans are, by nature, inquisitive about the world and the society in which they live. This assumption is supported by the public response to experimental educational programs that have been presented already.

It should not be difficult to draw from the vast idea and personality resources of our educational and cultural institutions basic materials for programs of high quality. It is immediately apparent that some subjects lend themselves to telecasting more readily than others. It is equally apparent that a balanced broadcasting schedule must be presented. Achievement of a well-rounded program will be more difficult than utilizing the materials and programs that first come to mind. Each program must

implement the total objectives of the station, whether these objectives are to extend university courses into the home or to constitute a major civic force in the community. In any case, in contrast to commercial TV, each program should fit into a total pattern determined by the objectives of the station.

The development of a theoretical framework of programming should logically precede the production of individual programs. Such a theoretical framework should:

1. Provide a quick and efficient system of classifying potential program materials.
2. Make it possible to specify the character and quality of materials needed to balance an existing program schedule.
3. Provide stimuli for the creation of new and original programming ideas.
4. Facilitate program evaluation by clearly establishing dimensions of program presentation in terms of the objectives of the station. That is to say, it should provide a framework whereby audience response can be measured and evaluated in the same terms as those employed in the conception of the program.

It is the purpose of this paper to discuss two dimensions of program organization, both of which are critical to the success of educational TV and both of which are independent of specific subjectmatter. Together they combine to create a device which could substantially accomplish these objectives.

Viewer Participation

Perhaps the most unique characteristic of educational TV is that it seeks to make its programs constructive as well as attractive experiences for the viewer. This involves a greater intellectual participation on the part of the listener than is required in most commercial entertainment programs. Educational stations must be instrumental in making *doers* out of the present host of *viewers*.

Let us consider some examples of level of audience participation. Most current entertainment programs require a minimum of participation on the part of the viewer. Comedy and variety shows, mysteries, light drama, and quiz programs may stimulate momentary participation, particularly at the level of superficial emotional involvement, but they do not require any sustained effort to comprehend or integrate the material presented. News analysis, documentary films, and discussion groups require somewhat more participation on the part of the listener in that the real value of the materials presented can be realized only if it is retained after the program has been presented. Programs whose essential

objective is to teach a new area of knowledge or develop a new skill or craft require a greater degree of active participation. And when it is the intent of the program to make the viewer an expert in some subject, maximum participation is required, just as it is in graduate study in the classroom.

It should be obvious that all gradations of audience participation are possible and that the level of participation may vary somewhat between viewers. (Thus a televised symphony may provide sheer entertainment for one person and evoke active intellectual participation from another.) It will be desirable on educational TV to present some materials at an intellectually demanding level and others at a level which requires only slightly more participation than commercial entertainment.

It will be useful, then, to employ a scale which will facilitate our evaluation of programming in terms of its potential for eliciting audience participation. Level of participation, as it is discussed here, includes emotional, intellectual, and physical participation in the content of the program, but is independent of subjectmatter *per se*, age, or education of the viewer. In over-all program planning, this scale could do much to insure the equilibrium of the total TV fare.

Personal Involvement

A second dimension that needs careful consideration is the personal relevance of the materials presented. How easily may the content of a given program be assimilated into the personal life and experience of the viewer? Some educational materials have immediate personal relevance, and hence appeal to him primarily as an individual. Other materials may have more meaning to the individual as a member of a social institution or enterprise. Still other programs may convey essentially abstract knowledge and still have considerable appeal for the listener. Ego involvement in any given material does not depend upon the subjectmatter as such. One can, for instance, discuss the hydrogen bomb at any one of the levels described: as a factor in the development of such social institutions as the United Nations, or as the springboard for a discussion of atomic theory. We may discuss pottery making as a craft for the home shop, the role of pottery making in our economy or in historical view, pottery as a subject of esthetic appreciation, or from the viewpoint of the chemistry of clay and glazes.

It has been justly said that the net effect of education is to increase the areas of discourse that have personal relevance for the individual. The viewer of educational TV, however, is not necessarily committed to this scholarly objective; he is entitled to possess a certain amount of abstract curiosity, to pursue certain types of programs for their own intrinsic pleasure, without personal involvement. As a consequence, it is

probably desirable that the programs of an educational TV station be spread thruout this scale of personal relevance.

In addition, there are some kinds of subjectmatter which may not be immediately presented in terms of personal context for all listeners. Some viewers might find the topic of cancer frightening if it were presented in terms of symptoms and mortality, and as a result would avoid interest and learning. A more impersonal presentation of the subject might lay the groundwork for later ability to cope with the topic on a personal level.

The Graphic Model

These two dimensions of an educational production—viewer participation and personal involvement—become more provocative of programming ideas when they are made the coordinates of a simple graph. The cells of the resulting graph represent all possible combinations of audience participation and ego involvement. Figure 1 provides one such possible representation.

Viewer participation has been arranged on the ordinate, ranging continuously from Entertainment thru Interest and Understanding to Achievement. The division of this scale into four major units is, of course, arbitrary. At the lower end of the scale are programs which provide primarily entertainment and require little or no intellectual activity to pursue. Programs at the Interest level require that the viewer maintain a certain amount of continuity in his appreciation of the program content, as for example the ordinary news broadcast. At the level of Understanding, the viewer participates actively in the search to understand underlying causes or reasons by following, for example, the news analyst, the music critic, or the expository science feature. We might say that programs at this level of audience participation are intended to assist the viewer in becoming a "verbal authority" on the subject. But the objective of the Achievement level of participation is to make him an expert in reality, to participate in the new sport or craft, to urge him to civic action, or to make what will be, for him at least, an original contribution to society.

The abscissa of Figure 1, the scale of ego involvement, is somewhat more subtle. Beginning with participation at the level of intimate Personal Life relevance, the scale proceeds thru Activities (e.g. crafts and sports), and the Family, to the larger problems related to the Community, the Nation, and the World. The transition from this continuum to that of the natural world logically passes thru Communication and the Fine Arts, the vehicles by which men relate to each other and to the Natural World.

These two dimensions of programming obviously do not attempt to define all the factors relevant to the successful educational production.

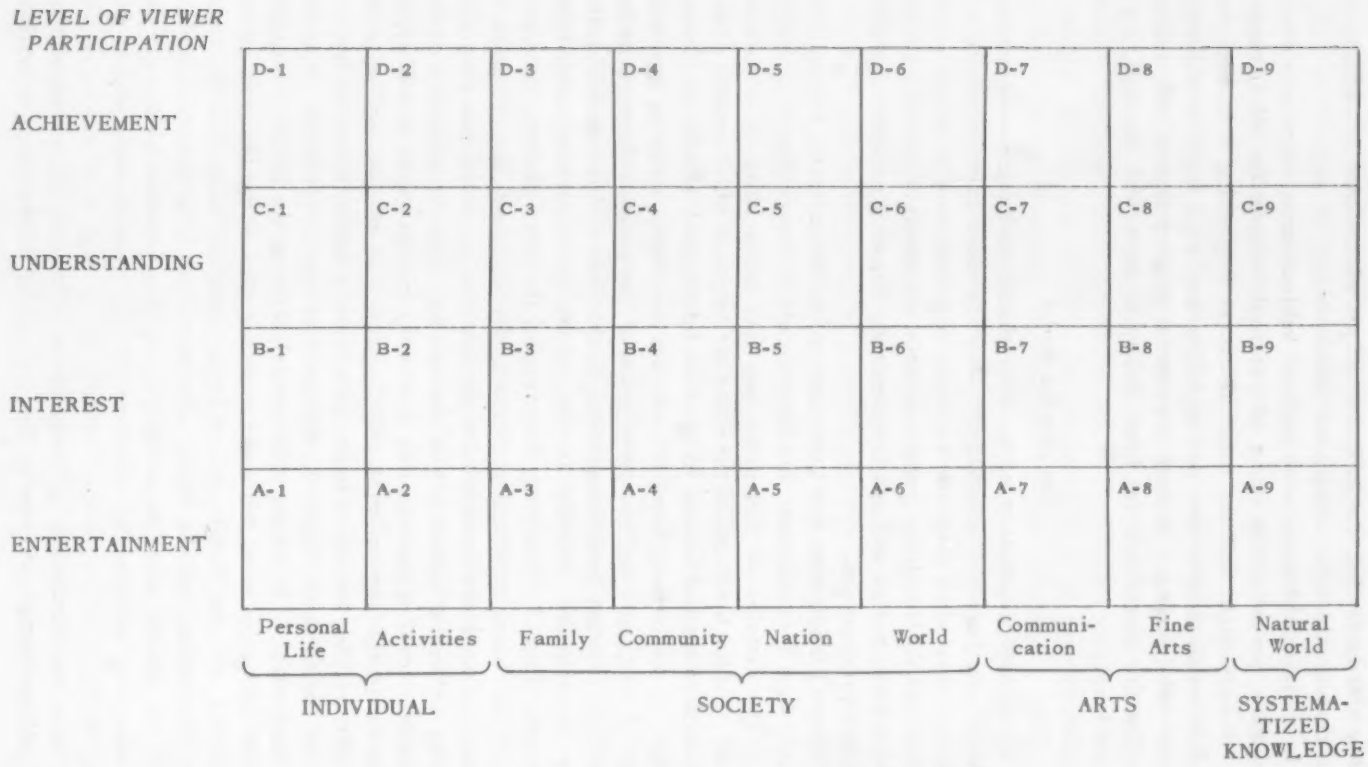

FIGURE 1. GRAPHIC MODEL FOR EDUCATIONAL PROGRAMMING

They do, however, appear to be substantially more useful in originating and evaluating the problem than from the viewpoint of subjectmatter, for instance. Programming organized on the basis of subjectmatter—so much music, so much biology, so much political science—has several limitations. Devising programs by subjectmatter can easily become arbitrary and perfunctory. We tend to think unimaginatively in terms of the organization of academic curriculums, and to feel that all possible ideas have been exploited when we have run thru the alphabet from anthropology to zoology. Modern educators realize that the content of the education which is both liberal and practical is not neatly organized around the titles of university departments, but rather crosses their boundaries and may transcend their scope. As we shall see presently, given subjectmatter can be programmed at any point within the area formed by our coordinate system of Figure 1.

Applications

Now let us investigate the possible application of this diagrammatic programming schema.

Classifying Potential Program Materials

Let us assume that we are viewing 10 films made by the Department of Agriculture and wish to catalog these materials for possible future use on the educational TV station. A file card would be made up for each film giving the title, source, running time, general content, and other pertinent data. The card would be filed, however, according to the level of participation and ego relevance of the content as treated in the film, i.e. according to the cell in which it falls in Figure 1. Within each cell, cards might be filed by subjectmatter for convenience. Thus the primary filing is according to the characteristics of the film as it was produced by the Department of Agriculture. Let us say that the film deals with the dairy industry from the standpoint of the contribution of this industry to the local economic system, and for comprehension requires only the Interest level of participation. The card is filed in cell B-4 of Figure 1. A working file of this sort would contain several thousand cards covering not only films of all types (teaching, dramatic, historical, etc.), but kinescoped concerts, interviews, commentaries, lectures, "how-to-do-it" materials, plus cards for any and all *ideas* which have not yet been used in program production.

Balancing Existing Programming

Assume now that we are producing a program on the relation of industry to government at a rather high level of audience participation (about cell C-5 of Figure 1) and we wish further illustrative material to

weave into our story. We might first consult all materials available in cell C-5 of the file. If unsatisfied, we consult the cells immediately adjacent in each direction for other ideas like the dairy industry film which can easily be adapted to our current production by appropriate introduction. By so doing, we have introduced content which is at a slightly more personalized level (further to the left in the Figure) and requiring somewhat less audience participation (lower in the Figure) than was the objective of our original program. If desirable, these known shifts in the level of programming might be compensated for in other ways in the program in order to keep a relatively advanced presentation from becoming more elementary solely in the interest of expediency of production.

The use of the two coordinates under consideration might also permit the systematic solution of another problem of considerable concern to educational TV, namely, how and to what extent can such delicate subjects as religion, politics, psychology, and biology be treated? Can we deal with the psychological concept of aggression on TV without bringing down the wrath of the church, parents, and psychoanalysts? Treating such a subject directly (whether in a dramatic skit, lecture, sermon, or other device) is highly personalized and is most likely to create controversy. In such a case, we may resort to displacing our programming progressively to the right along the horizontal axis of Figure 1 until an acceptable presentation is achieved. Thus we may find it preferable to discuss aggression from the sociological frame of reference of race prejudice, or, if this is still too controversial, international relations. A still less toxic presentation might be of aggression as portrayed in art forms (the paintings of Goya or the plays of Chekov), or aggression in animal behavior. Examples may be multiplied endlessly. Displacement of this sort in programming is, of course, not new, but its assessment permits opportunities for additional research.

A Stimulus for New Programming Ideas

Beyond cataloguing existing materials, this framework is productive of new ideas. Herein lies one of its chief virtues. Let us take a particular subjectmatter and consider how it might be programmed for each of the 36 cells of Figure 1. Considering the personal involvement dimension alone, child rearing might be dealt with from the viewpoint of (a) stages in the development of your child, (b) studies of children's play, (c) socialization of the child, (d) the role of nursery schools in the community, (e) functions of the United States Government's Children's Bureau, (f) anthropological studies of child rearing, (g) language development in children, (h) understanding the art creations of children, or (i) the biology of maturation. Note also that most of these treatments of the subject could potentially be handled at any point on the participation scale as well.

Superficially it would appear impossible to treat some subjectmatters in more than a few cells of Figure 1. Astronomy, for instance, seems inanimate and impersonal. Yet one could progressively move this subjectmatter toward greater personalization by a discussion of Holst's "The Planets," by dramatizing the role of astronomy in ancient civilization, by recounting the mass hysteria accompanying Halley's comet or the meteor shower of 1866, by a series of programs on telescope making and star-gazing as a hobby, or (at the most personalized level) by an account of how the celestial bodies were once believed to influence human behavior.

Considerable ingenuity will be necessary to treat some subjects with comparable versatility; but it is one of the prime purposes of such a schema to permit originality to be directed toward a pre-established programming goal. The thought provoking quality of this simple device can be best appreciated if the reader himself will consider how a number of illustrative topics might be programmed in each of the 36 cells of the graph. For example, try: Indochina, Shakespeare, Automobiles, Public Schools.

All of the ideas stimulated by the construction of such a graph are independent of the style of the program employed. A given subject, treated in conformity with a given cell of the graph, may still be conveyed by a dramatic production, a narration, exposition or interview, and may employ candid photography, unusual camera angles, or visual aids of any sort. These characteristics of educational TV programming are basically matters of technic and are also of great importance, but do not so directly reflect the intrinsic values and functions of an educational station.

Program Evaluation

Perhaps most useful is the application of this schema to the evaluation of the total programming schedule of a TV station. Plotting existing commercial programs on such a graph would show a necessarily heavy concentration of entertainment programs, many of which have relatively little personal relevance for the individual. Even the selected "educational" features which the annual reports of the TV networks cite as their contribution to human enlightenment would, for the most part, be classed only as Interest level on the viewer participation scale. (A marked increase in the number of serious educational features carried by commercial networks should, however, be noted.)

Educational TV does not yet know whether it can or should present programming representative of all combinations of audience participation and personalization. But it is necessary that this be determined at an early date, and that a constant check be maintained on trends in viewer

interests. This is not to say that an educational TV station will necessarily program in accordance with the expressed demands of its viewers, but the deviation of its programming from these demands must constantly be known if the station is to lead rather than follow popular trends in thinking.

As programming for educational TV gets under way, it may become apparent that certain combinations of participation and personalization are especially effective and that others are, for the present, unwise. Some subjectmatters will lend themselves more readily than others to Achievement participation. Since Achievement participation may have a much smaller audience than programs making less demand on the viewer, an optimum proportion of Achievement programming can probably be established which will maintain the maximum audience commensurate with the social objectives of the station. We may also be able to formulate principles about the direction and amount of depersonalization necessary to deal with materials or subjects to which society is particularly sensitive; and hence to predict, for example, whether a formal study course (i.e. Achievement) in "Comparative Religion" is more or less likely to achieve its objectives than the same material presented dramatically or in round-table discussion. We may also speculate upon the extent to which these two dimensions of programming may be manipulated by individual performers.

Most important, the scales presented here may provide a useful research tool in that they make possible the quantification of certain program qualities which might otherwise be dealt with only as intangibles. Many principles of programming are already well established for commercial broadcasting, but their applicability to educational TV has been seriously questioned. The programming principles which have been suggested here are aimed toward measuring and meeting existing needs and capacities of the viewing audience with the objective ultimately of creating new intellectual capacities in that audience.

"LOOK HERE, UPON THIS PICTURE...."[1]

● ALBERT McCLEERY

Albert McCleery presents the serious television producer's case for commercial television and its cultural contributions. The author is Executive Producer at NBC in New York and Director of the "Hallmark Hall of Fame" programs on the NBC Television network. Before entering television, he was Head of the University Theater at Fordham University.

During the early part of the discussions leading to the television production of Maurice Evans in *Hamlet*, a friend of mine asked me, "Do you really think television can put on honest-to-goodness Shakespeare?"

It seems to me he was asking two questions in one: (a) Do I think that television's economy is geared to putting on something as relatively highbrow as real, unadulterated Shakespeare? and (b) Do I think that the medium is artistically and mechanically capable of rendering Shakespeare as it should be rendered?

His implication was, of course, that the answers were negative and that for real, honest-to-goodness Shakespeare we would have to depend on a medium of true artistic and financial independence: namely, the theater.

I am getting a little tired of this misplaced condescension. Television has been taking a good deal of a kicking around of late, and increasingly the kicking has taken the form of invidious comparisons between it and the theater. Television, we are told, has sold its artistic integrity for a mess of industrialists' dollars; the theater, on the other hand, is the one medium of entertainment in this country that has steadfastly refused to cater to the mediocrity of the mass intellect.

Let's take a close look at the arguments used to support this thesis.

First, and most fundamental, is the well-known "lowest-common-denominator" progression. It runs like this: television cannot exist

[1] "Look here, upon this picture, and on this,
The counterfeit presentment of two brothers."
...Hamlet, Act III, Scene IV.

without the advertiser; the advertiser must of necessity reach a mass audience; to do this he must aim his appeal at the widest area of mass taste, and this area happens to be at the bottom of the pyramid—the lowest common denominator. Ipso facto, QED—the whodunits, the Westerns, the tired comedians and their tired gags, the tawdry quizzes, the give-aways.

This analysis, which is rapidly becoming the intellectual cliché of our day, unfortunately gains some substance by the fact that a good number of advertisers subscribe to it, and there are many shows on the air which do consciously and specifically aim at the bottom of the pyramid.

But let's not refuse to pick the flower because it was fertilized with manure. I don't hear anyone accusing Broadway of intellectual prostitution because *Hellzapoppin* made more money than *Death of a Salesman*, or because *The Moon is Blue* outsold *The Iceman Commeth*, or because *Abie's Irish Rose*, one of the great cornballs of our generation, was also one of the great money makers.

The fact is that not all sponsors set their sights at the bottom of the pyramid, and the ones who are aiming somewhere near the top are making a contribution, more significant than is generally realized, to the fulfilment of television's cultural obligation and potential. I think it is about time some of them received some recognition.

Take, for instance, the Hallmark Greeting Card Company, sponsor of the *Hamlet* production. Two years ago, for a number of very hard-headed, hard-cash reasons—but also because the company's president happens to feel an obligation to present something worthwhile along with his commercials—Hallmark decided to pay for the Christmas presentation of Gian-Carlo Menotti's *Amahl and the Night Visitors*.

Here was a perfect, controlled test-tube case for the proponents of the lowest-common-denominator thesis. According to this thesis, Hallmark couldn't find a better drain to pour its money down: an expensive, hour-long *opera*, of all things—ver-ry highbrow—written by a man with a hyphenated Italian name whose only previous claim to fame rested on a couple of long-hair musical what-is-its on Broadway which, tho given loud critical applause, had closed in a few months for lack of audience. Surely, if Hallmark was interested in a mass audience it had opened its booth on the wrong corner.

Hallmark *was* interested in a mass audience. And, surprise of surprises, it got one. As a matter of fact it sold so many greeting cards as a result of this first performance of *Amahl* that it came back and sponsored the opera twice more and then jumped at the chance to pay for the televising of *Hamlet*.

All very well, comes the rejoiner, so there are a few sponsors willing to take the gamble. But the costs of television being what they are,

and getting higher all the time, by the very economic nature of the medium the number of companies that can afford this kind of venturesome experimentation will gradually diminish until they are all strumming on the same string, going along with the tried and true—the whodunits, the Westerns, etc.

Once again, I think, not true. At least certainly no more true of television than of Broadway or of any entertainment medium that must pay its own way to survive. Take *Hamlet* again, as an example.

Our two-hour-long production of *Hamlet* cost the sponsor about $100,000, or roughly what it would cost to open the play on Broadway. Whether or not it was to be successful as art or entertainment, we knew to start with that somewhere between 10 and 20 million people would see it. So the sponsor's gamble on artistic quality was offset by the assurance of at least some degree of commercial recompense. After opening night he knew his nut would be paid and he would not have to sit biting his nails for six months to discover whether he would get back his investment.

On the stage, is there any such recompense for a flop? You spend your $100,000 and open the show on Broadway. If it is spectacularly successful, perhaps a million people will see it, and you will make a lot of money. If it is not—and by the law of averages it won't be—your total audience may number a few thousand and you are out $100,000. Total loss.

Which medium puts greater obstacles in the way of creative experimentation? And which, incidentally, carries with it the greater reward of cultural penetration of the masses?

No, it seems to me that that peculiar creation of the American broadcasting industry, the industrial sponsor of home entertainment, is much better equipped to fill the financial needs of the experimental artist than is the counterpart Broadway institution, the backer.

While I am on the subject, I should like also to inject a dissenting note into the Myth of the Monstrous Sponsor that has become a part of our American folklore. Having dealt with a fairly large number of sponsors in my time I can say quite honestly that I'll take a midwestern industrialist any time over the heterogeneous assortment of suburban matrons, night-club owners, amorous gangsters, wealthy playboys and the rest of the fauna that make up the backing of the average Broadway show.

The second question—the one implying that artistically and mechanically television cannot match the theater in the creation of a mood or the statement of an idea—seems to me as ill-founded as the first. This one rests on two major premises, the first of which we might call the Magic-of-the-Theater Dodge.

The truly great actors, so this theory goes, will never desert the theater for television because only in the theater can they achieve that ultimate satisfaction of a unity between themselves and their audience. Perhaps they will work for television when they need money or when they just want to do something to keep occupied. But they will always return to their first love.

This, I think, represents such a gross underestimation of an actor's powers of imagination as to amount to almost total misunderstanding. Anyone who says an actor cannot feel his audience simply because he cannot see it or hear its reaction has never been backstage in a television studio. There is more electricity in the atmosphere of a television studio during a dramatic performance than there is in all the theaters of Broadway.

Go backstage during the intermission of a Broadway play; you will find the stagehands playing cards and the actors gossiping in their dressing rooms; they have forgotten their audience. Go backstage during the commercial of a television show and you will find the same tension, the same identification of the actors with the parts they are playing, that the cast has worn from the opening minute.

When we speak of the magic of the theater I think we are speaking of the magic of an opening night. Every show is an opening night on television, and don't think for a moment that an actor doesn't peg the chronology of his life on the opening nights he has played.

Why did Maurice Evans broach the subject of a television *Hamlet* to NBC? Certainly not because he needed the money, and certainly not because he wanted something to keep him occupied—to do it he had to sandwich three weeks of rehearsals between performances of "Dial 'M' for Murder." Could he have sensed the hitherto undreamed-of excitement in the knowledge that 10 or 20 million people would have front-row seats for opening night? I think so. Here in two hours this great Shakespearean interpreter could play before a front-row audience larger than the total of all his previous audiences! That, I think, is artistic and emotional satisfaction for an actor.

The same argument, with minor adjustments, is employed to prove that the great playwrights, lyricists and composers will also shy away from television. And I think the mistake is the same.

No, I don't think that television has to worry about getting and keeping the finest artistic talent. Admittedly, many have been hesitant to make the plunge, because television is a hard, inexorable medium to work for and it requires adjustments in technics that artists have spent their lives perfecting. But the satisfactions are there, as many of the greatest of them have already found out, and I have no doubt that it is just a matter of time before the rest of them come over.

There is one score, however, in which the theater does have an emotional advantage over television. This is the fact that when you watch a stage presentation you are seeing the actors in the flesh. That, of course, is the one shortcoming that television can never overcome. Some day we will lick our lighting problems, we will have color on the screen, we won't have to worry about mike shadows, there will be plenty of studio space available and there will be sufficient writing and producing talent available to alleviate some of the strain on the relatively few good writers and producers we have now. But television will never be able to compete with the stage for that one quality of live flesh; and I think this is the basic reason why we will always have a theater in this country.

There are, however, recompensing factors that television offers, and that the theater cannot provide. The basic contribution of the movies to the dramatic technic was, I think, in the closeup. The movies gave us the opportunity to *see people thinking.* Television has taken that ability one step further and shows people *as* they are thinking. The stage has not this ability. In Shakespeare, incidentally, (and, for that matter, in all worthwhile drama) we are concerned primarily with the characters' thoughts and feelings; here the artistic advantage of television over the theater is marked.

There is another significant advantage television has that has been largely overlooked. That is its relative freedom from the captiousness of the critics. Their omnipotent sway—seldom benign—over Broadway is undisputed, but whoever heard of a TV show folding on its first performance purely on the basis of the critics' reviews?

Television has a lot of highly perceptive critics writing about it, and over the long run their words bear much weight with the medium. But a TV program cannot be assassinated with the dispatch and finality that a stage offering can be throttled in its crib.

All told, the forces that bear upon the ultimate quality of television's product are, it seems to me, less arbitrary and unsympathetic—and more constructive, all in all—than the social, artistic and economic forces that call the turn on the legitimate stage.

Perhaps the best way to sum it all up is to give in the last paragraph my answer to the question that was asked me in the first. My answer was: "Yes, I think we can put on honest Shakespeare, and I think we can get an audience big enough to make it pay off."

DAVI COLLEGE AND UNIVERSITY ROSTER PROGRAM

● CARLTON W. H. ERICKSON

This article describes the development, findings, evaluation, and future of the DAVI College and University Roster Project, an important step toward the assessment of audio-visual personnel resources in the United States.

Carlton W. H. Erickson is Director of the Audio-Visual Center at the University of Connecticut.

Who and where are the people currently responsible for the audio-visual activities in the colleges and universities of the U.S.A.? This was a question asked in one of the planning sessions of the National Committee on College and University Audio-Visual Programs at the Boston DAVI Convention held during February 1952. The job of answering the question fell to the writer, who became one of the steering committee members appointed by Chairman Robert de Kieffer, of Oklahoma University.

The Problem

From discussions at the Boston meeting, and suggestions made subsequently by the Chairman and members of the Steering Group, it became clear that the DAVI National Committee on College and University Audio-Visual Programs needed:

1. A comprehensive listing of college and university professional audio-visual workers whether affiliated with DAVI or not.
2. A listing of professional audio-visual workers at the higher education level who were members of the DAVI and who would in effect constitute the membership of the National Committee.
3. A set of data about each worker to include years of experience, degrees held, main interests and nature of present responsibilities.
4. A system for keeping the lists and information up-to-date.

In short the problem was to develop and carry out a plan to canvass each of the 1859 colleges and universities in the U.S.A., discover who

the A-V workers were, get information about them, prepare suitable lists, and keep them up to date.

The Need for the Roster

If the National Committee is to render valuable service to colleges and universities thruout the country, it must establish closer communication among the many who constitute its membership. Further, if the DAVI is to be strengthened as a national organization thru the work of this College and University Committee, the large potential membership in the higher education field ought to be known and encouraged to participate. The National Committee, then, needed to know who wants help and who is available and willing to help others in developing college and university audio-visual programs and services. Nationwide personnel information would doubtless facilitate the flow of such information and serve as a fruitful starting point for conducting future projects.

How the Survey Was Made

During the first week of September 1952, a brief questionnaire was sent to the president of every college and university listed in the *1951-52 Education Directory for Higher Education*, except where institutions were already represented on the DAVI official membership list. This questionnaire asked presidents to (a) name the individual presently supplying the leadership for audio-visual education activities and (b) answer "yes" or "no" to the question, "Does your institution have an Audio-Visual Services Center?"

Of the 1859 institutions of higher education listed in the Education Directory, 158 were represented on the DAVI Membership list in September 1952, as determined from the addresses supplied by DAVI headquarters. Thus 1701 presidents received the first query concerning audio-visual personnel and service organizations. Twelve hundred and eleven presidents replied, thus supplying an important starting point for the survey of personnel.

During the first week in November 1952, an 8-item questionnaire, accompanied by a covering letter from the National Committee Chairman, was mailed to the individuals named by college presidents and to those DAVI members who had college and university addresses. Each individual receiving this questionnaire was asked to supply information about the nature of his professional duties, his rank and/or title, special interests in the field, degrees, age, number of years of activity in the field, length of time on his present job, the relation of his A-V duties to total load, and in addition was asked to give the names of other individuals employed at his institution in professional A-V capacities. Such names

were checked against the card files previously set up and more questionnaires were mailed out as previously unreported people were discovered.

The Personnel Roster and the Master List

As soon as the completed questionnaires were received, they were analyzed and the information coded to reduce the size of the listings. For example, the nature of A-V responsibilities for each individual was coded as "a-b-c-d, or e," with:

"a" indicating leadership for the institution's audio-visual education activities. Included were directors of central service agencies, and chairmen of A-V Committees. When service agencies were separate organizations, the head of each was designated as "a".

"b" indicating audio-visual service center professional assistants, including instructors, consultants and unit supervisors.

"c" indicating instructors in A-V education and related courses, usually outside of central service centers.

"d" indicating extension specialists for agricultural extension organizations, and

"e" indicating academic department A-V material coordinators.

Similar codes were adopted for information about interests, degrees held, and years of experience.

The name of each questionnaire respondent was then checked against the DAVI membership list, and if it appeared there, that individual was listed on the DAVI Roster. All others, in addition to DAVI members, were included in the comprehensive listing, the Master List. The first lists were completed in February 1953. The DAVI Roster of College and University Audio-Visual Workers was mimeographed and a copy mailed to each of 271 names on the list. The Master List contained a total of 957 names.

In August 1953, based upon additional questionnaires returned, and needed corrections, the revision of the Roster and Master List was undertaken and completed. As before, the Roster was mimeographed and mailed to individuals listed, and typewritten copies of the Master List were sent to DAVI Headquarters and the Chairman of the National Committee.

Findings

The data contained in the Roster Questionnaires were explored and several tabulations made with the following results:

1. *Eleven hundred forty-eight* professional audio-visual workers have been located in the colleges and universities of the U.S.A. Seventy-

one of the 1148 A-V workers were included in the Master List on the basis of membership in DAVI, or other knowledge of activity in the field, and since their Roster Questionnaires have not been returned, many of these could not be included in the various tabulations.

2. *Three hundred forty-nine* of the individuals working in audio-visual capacities in colleges and universities are members of DAVI (as of June 1, 1953).

3. *Seven hundred fifty-two* individuals devote part time to their college and university audio-visual duties.

4. *Three hundred thirty-one* individuals devote full time to their audio-visual duties.

5. *One hundred fifty-four* colleges and universities have more than one professional staff member devoting time to various audio-visual programs and services.

6. *Six hundred eighty-nine* colleges and universities have audio-visual service centers in various stages of development as indicated by designated leadership.

7. *Approximately 26 percent* of the Nation's college and university audio-visual personnel have the Doctor's degree.

8. *About 70 percent* of the known audio-visual personnel in colleges and universities indicate that their interests are general, and 13 percent express a main interest in teaching A-V courses. Six percent are especially interested in photographic production, both still and motion. About 3 percent indicate that their main concern in the field is radio and television production. Seven individuals revealed that they were primarily interested in conducting research, and three individuals stated that they were mainly concerned with the production of exhibits.

9. *Eleven out of every hundred* professional staff members devoting time to audio-visual services and programs in U. S. colleges and universities have had over 15 years of experience, the average being approximately eight years.

10. *One thousand seventy-two* college and university staff members have been on their present audio-visual jobs for an average period of five years as of September 1953. Forty-one percent have been on their A-V jobs three years or less; 49 percent, from four to 10 years; 7½ percent, from 11 to 16 years; and slightly more than 1 percent in each of the two categories, 17–24 and 25–31 years.

When the above findings are considered, it should be remembered that 506 of the 1859 colleges and universities have not been heard from, and that an additional 163 colleges and universities, reported by presidents as having personnel giving audio-visual services, have not as yet responded to the Roster Questionnaire.

How Records Will Be Maintained

The system developed for maintenance and revision is as follows:

1. Each returned questionnaire was filed in the same order in which names appear in the Master List for quick reference to original data.

2. A file card was prepared for each individual who has not yet returned the questionnaire. This is the "pending file," for pursuit of nonrespondents.

3. A file card was prepared for each college and university member of DAVI.

4. A copy of the *Education Directory for Higher Education* was appropriately checked by a code mark which indicated colleges and universities *not heard from, heard from but without audio-visual services or leadership, heard from and having leadership and/or A-V service organizations*, to facilitate obtaining information about change in status.

5. A "Correction and Revision" copy of the Roster and Master List, for making changes and additions upon receipt of new information.

An annual check-up by mail is planned for the present, and the DAVI membership list will be checked twice each year in order to keep the DAVI College and University Roster up-to-date.

A Look Backward

Hundreds of hours of arduous work and not a little money were expended on the DAVI Roster Project. In retrospect, were the technics appropriate? The decision to send a brief questionnaire to presidents of all colleges and universities not represented on the DAVI Membership list, asking for the name of the person designated to supply the leadership for audio-visual education activities, proved to be an effective starting point for the survey. Seventy percent of the presidents replied. It was believed that a person with some audio-visual duties would be the one best qualified to give the names of others at the same institution who were also involved in A-V services. This "prying" process, and the persistence with which it was applied to each new individual reported, demanded hours of clerical labor, but it got results. The disadvantage of this process, however, was that frequently individuals were reported who merely made use of films and other materials in their own classes. Such individuals, who apparently had not been designated to give service to others, were of course screened out. Both questionnaires were kept brief to obtain the largest possible return. Since the primary purpose was to locate all who served the field professionally, the pattern for search was good.

The major weakness which came to light was in the attempt to obtain specific information about the nature of the individual's work and the organizational framework in which he served. In some cases, the vagueness of replies made it hazardous to determine *who* worked for *what* agency. Even more thought should have been devoted to the phrasing of certain of the questionnaire items to increase the objectivity of subsequent interpretation. Another possible weakness is the brevity of the coded information as incorporated in the listing of personnel. In a future revision, the serviceability of the lists might be improved by, for example, including the name of the service agency, the person's title, and specific responsibilities, in other than coded form.

Personnel Survey To Continue

Now that the preliminary survey of college and university workers is completed, it is planned to pursue nonrespondents, making corrections and additions to the present *Official Roster* and *Master List* as needed. The next step will be the construction of a questionnaire for the purpose of collecting information on changes in status, and for rechecking available data on the different kinds of agencies now providing audio-visual services. An accurate and up-to-date answer to WHO and WHERE will doubtless facilitate the full use of personnel resources by the National Committee in carrying forward its program of service. Since this project is being carried out under the auspices of the Department of Audio-Visual Instruction of the NEA, the decision on the eventual disposition of the data collected will be made by that organization, of which the National Committee is a part. However, the data at hand, along with the Master List might prove to be of value to other groups within the DAVI. Requests concerning the use of the data or the listings should be addressed to Dr. Robert de Kieffer, Chairman, National Committee on College and University Audio-Visual Programs, College of Education, Norman, Oklahoma. Further, it is hoped that additional hundreds of college and university workers will join forces with the National Committee thru active membership in DAVI.

BOOK REVIEWS

A REPLY TO JAMES J. GIBSON

● KENNETH NORBERG

Dr. Gibson's reply to my review of his book in the Summer 1953 issue of the *Audio-Visual Communication Review* was addressed not only to the review, but also (in fact mainly) to the Author's article, *Perception Research and Audio-Visual Education*, which appeared in the Winter 1953 issue of this journal. In order to establish a base line for further discussion it seems desirable to restate three points advanced (or implied) in my earlier paper: (a) If we adopt a transactional view, perception and learning cannot be regarded as exhibiting a one-way cause-effect relationship. (b) Perception viewed as an occasion of learning (not merely as cause or effect) has duration in time, encompassing, but not limited to, moments of sensory excitation. In other words, perception is deliberately taken to be a function of the totality of behavior, not a discrete entity, or separate kind of experience marked off by some set of intrinsic properties. (c) In similar vein, the relationship of perception and learning is viewed as a reciprocal process essentially continuous in time, and involving other aspects of behavior such as the emotional, the reflective, and the communicative.

In his reply to the position just indicated, Dr. Gibson also directed his comments to the Hanover Institute (now known as the Institute for Associated Research) line of inquiry which he regards as "a very poor basis on which to found a science of communication." Before going further, I would like to point out that it was not, and is not, my intention to suggest a science of communication based exclusively upon any one line of inquiry, or theory, in the field of psychology. On the other hand,

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Dr. Kenneth Norberg is Associate Professor of Education at Sacramento State College, California.

the author takes the view that the general approach to the study of human behavior described by Dewey and Bentley as "transactional"[1] is the most promising now available, and that the psychological work centered in the Ames demonstrations marks a highly seminal development along this line which educators cannot afford to overlook.

Dr. Gibson objects to "mixing" a transactional philosophy (which he concedes to have some merit for the educator) with "notions about vision." He asserts that the theory connected with the Ames demonstrations "might fairly be called a sort of visual Christian Science," and that it "passes over most of the patiently accumulated evidence and closely reasoned debates of a century of work on the visual process." These are broad observations, and this brief reply will necessarily be broad, too. The charge of subjectivism is mentioned twice in Dr. Gibson's statement. This charge is made presumably because the Ames demonstrations exhibit perception as a function of the life history and current interests of the individual, not determined exclusively by retinal stimulation. When Dr. Gibson asserts that Berkeley would be pleased with the Ames demonstrations he apparently does so without taking a careful look at the philosophic position underlying the demonstrations. The transactional view, which is involved, does not deny the external world as hard fact; it only insists that we deal with the perceived world as it actually occurs: a transaction involving the perspective of the human individual, with all that implies. Dr. Gibson has indicated that he is opposed to "mixing" philosophy and psychology. However, in his charge that the Ames demonstrations reflect subjectivism he actually makes a philosophic observation and reveals an implicit philosophical position of his own which, if it were made explicit, would help to clarify his views on perception.

Dr. Gibson's statement that the theory connected with the Ames demonstrations overlooks previous developments in the psychology of visual perception is also difficult to understand. It is apparent that Gibson's work is in a tradition reminiscent in some respects of such early predecessors as Helmholtz, Wundt, and Fechner—and that this type of "stimulus oriented" approach has tended to dominate experimental work in perception. But it is equally apparent that the Ames demonstrations also represent an important tendency in psychological inquiry (which might be called "situation oriented" as opposed to "stimulus oriented") going back to such figures as Brentano, James, and Dewey. That the questioning of the traditional "stimulus oriented" approach to perception is not wholly recent is evident even in the writings of Helm-

[1]Dewey, J., and Bentley, A. F. *Knowing and the Known.* Boston: Beacon Press, 1949. (Also earlier writings by the same authors.)

holtz, who, for all his preoccupation with the physical stimulus and immediately associated physiological factors, also suggested some elements of a functional theory of perception.[2] Among more recent psychologists, Tolman, in 1932, for instance, quoted such names as E. B. Holt, Grace A. de Laguna, A. P. Weiss, and J. R. Kantor as agreeing with him in a "molar definition" of behavior.[3] The same type of distinction between a "molar" and a "molecular" approach to psychological problems has been used by many others, including the clinical psychologists and the gestaltists. The fact that both Dr. Gibson and the supporters of the Ames demonstrations lay claim to some kinship with the gestaltists and with other psychological predecessors, in common, is merely another indication that no recent development in this field is likely to be entirely pure so far as ancestry is concerned.

Dr. Gibson has already pointed out some educational implications of his theory as opposed to a transactional view. Some others may be suggested here. A "stimulus oriented" theory, such as Dr. Gibson's, would seem to preclude any discussion of perception and learning from the standpoint of the assumptions and purposes of the learner. At least, one would have to deal with such factors as something extraneous to the process of ("literal") perception as such. Also, what we ("literally") perceive, according to Dr. Gibson's theory is not learned in any appreciable degree. We see the world pretty much as it is, which is somehow settled in advance of our seeing it, and we all see it about the same way. Hence, what we learn thru such perception is presumably by virtue of merely opening our eyes and taking in what is there to see—moreover we must all take in the same thing. This is plausible within certain limits, particularly if we apply the theory only to spatial properties of objects, and under ordinary conditions of visual observation, as Gibson does. (However, some findings of the Institute for Associated Research would indicate that perception of spatial properties is not determined exclusively by retinal stimulation. For instance, it has been demonstrated that *where* and what size we perceive an object to be depends on *what* we assume it to be.) What is questioned is not the validity of the theory of "literal perception," within its own prescribed limits, but whether this theory requires us to discount (or hold constant) too many factors other than retinal stimulation. In any case, the fact remains that any serious consideration of the conditions of learning requires us to go beyond this abstract world of "literal perception" to a world in which ob-

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[2]Helmholtz, H. *Treatise on Physiological Optics.* Rochester, N. Y.: Optical Society of America, 1924–25.

[3]Tolman, Edward Chase. *Purposive Behavior in Animals and Men.* New York: Century, 1932. pp. 8–9.

jects have other than merely spatial properties. Dr. Gibson has already envisaged the development of a theory of "schematic perception," dealing with a world of concrete objects, which have identities, uses, and values. If the theory of "schematic perception" were now available it would be easier to trace the educational implications of Gibson's position as a whole. Unfortunately, all we have to go on is the theory of "literal perception." This, in contrast is a transactional approach, does not seem to be applicable to a complete working theory of perception and learning.

REISZ, KAREL. *The Technique of Film Editing.* New York: Farrar, Straus and Young, 1953. 285 p. $7.50.

Reviewed by

● CAMERON MACAULEY

At last a full treatment of filmaking's formative process. And a down-to-earth one, at that.

The Councilmen of The British Film Academy set themselves the task of examining film literature in order to set about filling the gaps not covered by existing texts. *The Technique of Film Editing* is one result. The Council, in good democratic fashion, set up a 10 man committee of experienced filmakers like Basil Wright, David Lean and Roy Boulting. This group pooled their wide experience of film styles to form this objective introduction to film editing. But the Council wisely chose a layman to compile and write it. Karel Reisz has a scientific background. With analytical skill he has made the material easy, sensible and lucid.

The writing deserves further praise. Reisz manages to keep the many ideas from existing only in the rarified air of high theory. By avoiding unnecessary abstraction he has made the book useful and satisfying to a wide variety of readers. Its style is straightforward and discoursive. Points are made and opinions defended thru the use of 30 sequence descriptions selected from well-known British and American films. Fifteen are illustrated with pictures from the films themselves. This precise method of description, illustration and comment provides for adequate analysis of purely cinematic effects.

Altho such analysis of visual form, movement, sound and meaning might tend to destroy the aggregate effect and miss the film's inner life,

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Cameron Macauley is an educational film and television producer in the Bureau of Audio-Visual Instruction, The University of Wisconsin.

Reisz avoids shattering the accumulative effect of a sequence and suggests its affective qualities as well. To illustrate the imaginative documentary, for instance, he presents two meaningful sequences from Flaherty's *Louisiana Story* and follows up with nine pages of inspired comment by Helen van Dongen, the editor and coproducer.

Unlike the great film theorists (Pudovkin, Eisenstein and the young Spottiswoode) this book happily regards all readers. It is both a symposium and compendium without being esoteric. Opinion is admittedly opinion and some arguments are confessed to be thin or not always valid. Such honesty is fresh and disarming but needn't discourage the reader's evaluation. Nor does *The Technique of Film Editing* require a filmaking background of the reader. In the section on principles of editing it explains the basic problems and their solutions before passing on to less perspicuous elements such as timing, rhythm and selection of shots. And these are illustrated with clear examples. A sequence from Hitchcock's *Rope* shows lack of good timing caused by its moving camera technic which took the place of cutting. The opening shock sequence from *Great Expectations* illustrates clever timing. The *Queen of Spades, Tobacco Road* and *Lady from Shanghai* examples prove that the act of selecting the image is a fundamental and creative step.

The process of film editing is not restricted to cutting room activity. It is defined as the entire formative process of motion picture design and construction. This broad definition must have made the book difficult to write but it has made it more comprehensive and fruitful to the reader. By examining the constructive interplay of writer, director, soundman and editor we are able to see how films are created thru a harmonious fusion of talents controlled by a single tenor of understanding. (It is urged that a single mind control both directing and editing.)

Definitions are simple and denotative. Montage, by example, is explained in each of its several meanings and followed by a script-planned montage from *Citizen Kane* as a good modern example. Knowing what is meant by this frequent and amphibolous term can be helpful to a reader of film literature. Its meaning changes in reference to early Russian directors, Pudovkin or Eisenstein (who each redefined it), modern French cinema, or British and Hollywood films.

Story films are defined as those developing plots while documentary films are concerned with the exposition of themes. This latter serves for the genus, documentary. Its species are given each a separate chapter (documentary reportage, the imaginative documentary, and the documentary film of ideas).

The chapter on educational films is an important one. Some British educational films are among the best and their experience is evident here.

The book recommends that educational film editors should strive for clarity and logical exposition based on a correct assessment of the audience's receptivity. Editing is largely determined at the script stage with these films. Their aim must remain clear thruout the production process in order to make each point precise, with a logical flow of properly emphasized steps. The continuity must be sharpened by judicious direction and camera handling. The viewer's attention is best carried forward without diversion or confusion. These meticulous obligations make it clear why relatively few filmakers are able to produce superior educational films.

The educational film is subdivided into *instructional* films and *teaching* films. These two types are well defined, tho their choice of names is weak; the words are synonymous. *Instructional* films are defined as a demonstration concerned with drills, manipulative skills and rules of handling. Our armed services call them, more precisely, "training films." *Teaching* films, on the other hand, deal with a continuity and development of ideas from general theories to complex principles. This type could well have been called "conceptual films" or "the teaching film of ideas."

Construction of the how-it's-done or *instructional* film is governed by the actual procedure of the doing, adopted in practice. Logical inference organizes the less tangible material of the *teaching* or conceptual film into a smooth development of the argument. A clear example of each is shown and discussed. Camera angles, cutting points, pace and timing and the use of commentary are examined. Above all, smoothness and minute accuracy of presentation are considered necessary for the educational film.

The Technique of Film Editing is well organized. Divided into three sections, the first and last are of a general nature. The first gives the development in a History of Editing and the last handles the Principles of Editing. The midsection is called the Practice of Editing and forms the major symposium by the experts. Action and dialog sequences, comedy, newsreels and the compilation film are covered, here, in separate chapters. It is also here that personal theory airs itself for worthwhile consideration. An example is the common bias that defines the film as primarily a *visual* medium and therefore favors the exciting visual image as its predominate element. But the balance is struck with a sincere recommendation to fully utilize the sound track, a thing not often accomplished. (One of the most brilliant screen examples analyzes the intermixture of some six sound tracks in the robbery sequence from *Odd Man Out.*)

It is strange to find at the end of the book what seems primary: the principles of editing. But these turn out to be a wise conclusion, since

the history and practice of editing—and the examples—provide a fertile preparation to the elemental technics.

With such good content arrangement it is regrettable that the book's physical make-up, where the pictures are concerned, is not well laid-out. In a chapter near the end, for example, a film's shot description is interrupted with a page of pictures from another film. The second film's description is in turn interrupted by another page of pictures from a third film example. This results in taxing the reader's concentration as he fumbles to and fro between confused, separated pages that only together form the full text.

This excellent book is subtitled, "Basic Principles for T.V." Nothing could be more of an afterthought. As director-editor in both film and TV, I insist that their principles often are not similar. If the authors disagree with this it is curious that television is never mentioned in the book.

The Technique of Film Editing is the only comprehensive introduction to its subject. And it is an objective, useful one. Thorold Dickinson, in his introduction to the book, suggests two readings. I recommend this as wise advice especially to people working in or concerned with audio-visual education. Too often the educator—and even the audio-visual specialist—dangerously narrows his understanding about films. This book tries to deal fairly with all styles and types and they are all rich experience of the modern world.

This book may be more than a valuable compendium on film editing. It may be the start of a new critical approach to all visual media (3-D, wide screen and TV included.) Its approach tempers the speculative ground of pure theory or personal preference thru sympathetic examination of the text itself which in this case is film. Such critical activity can lead us into a deeper understanding.

BELAZS, BELA. *Theory of the Film.* New York: Roy Publishers, 1953. 291 p. Translated from the Hungarian by Edith Bone.

Reviewed by

● JACKSON TIFFANY

Seeing the need of the film audience for deeper understanding, Bela Belazs has built his theory of film around audience response. It is our

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Jackson Tiffany is Supervisor of Film Production in the Department of Audio-Visual Instruction, The University of Wisconsin.

latent visual culture that challenges him to analyse the form and function of film so that mature appreciation of film as a unique art form will develop. He is concerned that film art is generally neglected in our schools. He feels that the study of film needs a formal place in the curriculum along with the traditional art forms. Perhaps, when the motion picture audience is as conscious of the concepts of film aesthetics as they are of the elements of music, painting, and theater, there will be less of the trance-like silence when the lights go on.

The author feels strongly about the brilliant developments in visual culture of the last years of the silent film. He is careful to delineate them, for many of these developments were forgotten with the introduction of sound. The analysis of meaning in film is extended to the role of sound, color, and three dimension. His attitude toward the innovations is dynamic. Film can incorporate them and the result *can* be a finer expression. But Belazs saw that result coming from a fuller development of the principles being discovered with the silent film. "The picture camera had only just started to acquire sensitive nerves and an imagination of its own. The art of set-up, viewpoint, angle, and editing had just reached the stage where it could overcome the material resistance of primitive objectivity. The silent film was just about to develop a psychological subtlety and creative power unrivaled in any other art. Then the invention of the sound film came down on it like a landslide." Belazs looked to post World War II dissatisfaction with the sound film to create an art of sound film that goes beyond filmed theater. He died before the translation of his book was finished. The impact of television and the wide screen was not yet a consideration.

Identification between spectator and camera, idea-association, the close-up, angle, montage, the gesture, asynchronous sound, and associative sound, these are some of the concepts that Belazs builds into the structure of his theory. He seeks to speak to the film spectator, and much of his writing can give him a solid introduction. One aspect, however, will block understanding of his ideas. Thruout the book he refers to "physiognomy." He considers that "what makes objects expressive are the human (facial) expressions projected on them." This anthropomorphism may conceal a valid concept of the role of experience in some aesthetic perception. As it stands, it is questionable.

The Marxist terms scattered thru the book seem like surface decoration. Down deep is an obvious concern for the individual's aesthetic experience. Behind Belazs's insight is a lifetime of work with film. He avoids the temptation to justify or elaborate on his own work, and goes on to build on his experiences a theory of film rich in ideas to be tested by the film student and filmaker.

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WORLD COMMUNICATIONS

A-V PERIODICALS IN GREAT BRITAIN

● STANLEY L. JOHNSON

There is growing activity in many European countries along audio-visual lines, and it is activity about which all too few of us here in the United States are familiar. This column will review some of the sources of information about these activities—namely, the A-V periodicals of Great Britain. With no translation problems and the comparative ease of obtaining these periodicals, I hope that many will be stimulated to read them. As Andries Deinum said in the Spring issue while reviewing *Sight and Sound*, "this material frequently brings a point of view refreshingly nonAmerican, thereby giving our thinking a needed perspective."

You will notice that much of what is being published on A-V in Great Britain is under sponsorship of some organization. In several cases I have given short descriptions of these organizations and their objectives.

The Film Teacher. Published at 29 Woodside, Wimbledon, London, S.W.19, England. Annual subscription (3 issues) 6/6 (approx. $.90). Derek J. Davies, editor.

This small but interesting publication is the Journal of the Society of Film Teachers. Membership in the Society including subscription to *The Film Teacher* may be obtained for 5s. ($.75) per year by writing to Jack Smith, King's College School, Wimbledon Common, London, S.W. 19, England. This is a national organization in England founded in 1950 to promote and encourage the teaching of film appreciation in schools, colleges and the Youth Service. The Journal aims to help both members teaching film as a curricular subject and those organizing junior film societies, discussion groups and other activities in schools

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Stanley L. Johnson is with the School of Public Administration, University of Southern California.

and youth clubs. In addition to the journal, other material is occasionally sent free to members.

During the past year, they distributed a 56-page booklet, "Twenty Films to Use in Junior Film Societies," which was a joint publication of The British Film Institute and The Society of Film Teachers. Viewing panels selected the 20 films described for their suitability in showing to children and adolescents and gives recommendations as to how they can most effectively be used in school. Essential credits of each film are given together with some background information and digests of professional critical opinion so that teachers may prepare program notes and plan introductory comments and discussion.

Another free publication that has come along with membership is "Running a School Film Society" by Jack Smith, the secretary of the Society. Much of the material is not applicable to the situation in the United States, but some of the ideas and suggestions on presentation and the teaching of appreciation may be useful.

The journal itself has carried articles such as "Primary Problems" and "A Grammar School Approach," both of them discussing the problems faced by teachers anxious to introduce some form of film teaching to children in lower elementary grades. "Filmstrip Films" gave details on teaching motion picture production when such equipment was not available by producing a filmstrip using motion picture technics.

Film User. Published by Current Affairs Ltd., 174 Brompton Road, London, S.W. 3, England. Annual subscription in USA (12 issues) 18s. (approx. $2.60). Bernard Dolman, founder and managing editor. Brian Watkinson, editor.

This monthly magazine devoted to "Cinefilm (16mm) and Filmstrip (35mm)" is now in its seventh year of publication. It contains articles covering the gamut of use and production of audio-visual materials and equipment, news of audio-visual activities in England, reviews of the literature, reports from abroad, a "Register of Releases" of new films (including entertainment) and filmstrips, and "Test Reports" of new a-v equipment (a feature that might well be included in a-v periodicals of the United States).

Look and Listen. Published at 45 Dorset Street, London, W.1, England. Annual subscription (12 issues) 20s. (approx. $2.85). William Warbey, editor.

Look and Listen is now in its seventh year of publication. Each issue carries reviews of new filmstrips from the National Federation of Educational Film Groups, and on alternate months there are reviews of religious films and filmstrips. The magazine gives a good balance in presenting the use of all the audio-visual materials used in England. Recently, "Making Models of Human Figures" described the construction of models using easily obtained materials such as cardboard, paper, modeling clay, and plastics. "Rear Projection of Film, Strip, or Slide" gave details for settings and use of such presentation.

There is usually a section dealing with tape recorders and recordings. The use of audio-visual materials in industry is also covered, as well as information and practices in use from other countries.

Science and Film. Published from London for the International Scientific Film Association, 164 Shaftesbury Ave., London, W.C.2, England. Annual subscription (4 issues), 12s. 6d. (approx. $1.80).

This important scientific film journal is in its second year of publication and contains perceptive articles on the scientific motion picture. Also included are news of activities of the International Scientific Film Association (headquarters at 38, Avenue des Ternes, Paris 17, France), news from abroad, reviews of the a-v literature in the scientific field, and lists of scientific films. The science teacher in the United States should profit from a reading of this publication.

Sight and Sound, Critics' Choice, Monthly Film Bulletin, Quarterly Gazette, and Members' Newsletter. Published at 164 Shaftesbury Avenue, London, W.C.2, England.

These are all publications of the British Film Institute. *Sight and Sound* was reviewed by Andries Deinum in the Spring 1953 issue of *Audio-Visual Communication Review*. The others, altho of lesser importance and not a-v publications in the true sense, will prove of value to those readers whose interest is in the broad study and application of film.

Critics' Choice (free to members of the British Film Institute) has been an experiment by the BFI in presenting to the average film-goer critical reviews of current films showing in England. It first appeared in April 1952 and continued for 12 monthly issues as a small multifold sheet. At the beginning of its second year it expanded to a 5" × 7" booklet of 20 pages. Seven well known critics of the film give their views in a candid appraisal which is most stimulating.

Monthly Film Bulletin (annual subscription for 12 issues, 25/6, approx. $3.60, to nonmembers, 12/-, approx. $1.68, to members) is a valuable reference work containing independent reviews on all feature entertainment films released in Britain every month, as well as a selection of the short films. Approximately 50 current films are reviewed in each issue, including almost every major American, British, and foreign release.

Quarterly Gazette and *Members' Newsletter* (free to members). These two publications are not usually found listed anywhere and are seldom mentioned even by the BFI. They usually include 2 to 8 pages of membership information and news of BFI activity and give the American reader a good idea of how the BFI runs and how it has made film a recognized art in England.

The Times Educational Supplement. Published by *The Times*, London, E.C.4, England. Annual subscription in the US (52 issues) $5.

This famous weekly newspaper supplement, altho covering all phases of education, still gives more news and information about audio-visual education thruout the world than any other regular periodical that I have read. Accounts of AV research and activities going on in the US have actually appeared in these pages long before they saw print in many AV periodicals here in our own country. With the advantages of being a newspaper with its quick coverage of news, a weekly with its frequency and written for teachers interested in the practical teaching application, this periodical should be of interest to audio-visual specialists and classroom teachers alike.

The University Film Journal. Published by the British Universities Film Council. Subscriptions should be sent to C. J. Duncan, Department of Photography, The Medical School, King's College, Newcastle upon Tyne. Annual subscription (3 issues), 5s. (approx. 75¢). G. P. Meredith, editor. Department of Psychology, Leeds University.

Now published in journal form after seven issues as a bulletin, this is the only periodical in English devoted exclusively to a-v problems of the university. The British Universities Film Council was organized in 1948, and, assisted by grants from the British Film Institute, "collects and disseminates information on suitable films or parts of films, and on related material; it organises film production schools for members of university staffs, and consults with the other bodies doing similar work for universities, schools and education generally. It recommends, for inclusion in the British Film Institute Library, films useful for university purposes." The *Journal* contains research studies, articles related to the film in university teaching, reviews of the literature, lists of university films, and activities of interest to university film workers. This little journal (24 p.) makes an important contribution to the a-v literature.

Visual Education. Published by the National Committee for Visual Aids in Education, 33 Queen Anne Street, London, W.1, England. Annual subscription (12 issues), 14s., (approx. $2).

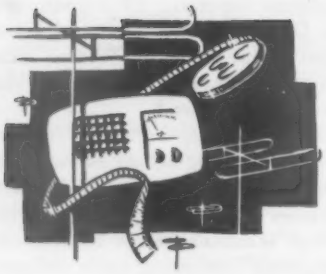
In 1946 local education authorities and teachers' organizations in England established the National Committee for Visual Aids in Education, its function being the planning of an audio-visual education policy, collecting and collating views, nominating practicing teachers as educational advisors to producers of films, developing regional film libraries, carrying out research, advising local school authorities on films and equipment, and determining the educational films needed.

As the National Committee prepared its recommendations, it became evident that there was need for an organization which would not only secure the actual production of visual aids, but also their distribution. In 1948 the Educational Foundation for Visual Aids was set up for this purpose. The Foundation was established as an educational trust independent of the government, tho its members were appointed by the Minister of Education. It received a loan of £ 130,000 ($364,000) from the Ministry of Education to get started and is to sustain itself with funds from sales and services. In securing the films recommended by the National Committee, the Foundation, when finding no commercial producer willing to take the financial risk, may either commission the film and retain the rights, or place with the producer an advanced order for enough copies to enable him to finance the project.

Visual Education is the official monthly magazine of the National Committee of Visual Aids in Education. It is quite similar in size and style to America's *Educational Screen*, and is likewise written to the classroom teacher as well as the AV specialist. Regular features include a detachable center section reviewing the latest films and filmstrips available to schools, a book review department, a "Regional Reports" section giving news of local organization activity, and a "News Digest" of current events pertaining to AV. Policies, plans, and conference reports from the National Committee are reported frequently.

Each year the June issue is enlarged to become a conference *Handbook* and *Visual Aids Yearbook*. The full program and list of exhibits for the national conference is given along with the annual committee reports. As a yearbook, this issue lists all the AV equipment available in Great Britain with descriptions and prices of each item. Altho these are all listed under the title "Visual Aids Equipment," it includes tape recorders and other audio devices. (It seems the British also are having trouble identifying this area of endeavor.)

Some of the more interesting articles appearing recently in *Visual Education* include: "Some Problems of Research in Perception," a series in three installments by A. Leonard of the Cambridge Psychological Laboratory; "Filmstrip Projector Maintenance," a series of how-to articles written very clearly with simple steps of procedure in caring for the several standard makes of filmstrip projectors; and another series on "The Use of Diagrams" covering many methods of presenting graphs and diagrams.



TV and RADIO REVIEWS

• JIM MILES

THE TELEVISION PICTURE

One year ago last June the Federal Communications Commission allocated 242 channels for the exclusive use of educational television, stating that until June 2, 1953—these channels would be inviolable. Since this date is now past, petitions to use these channels for commercial purposes have been made and we can expect commercial broadcasters to make more such petitions.

Altho a great deal has been written by all kinds of interested people on educational television, there are still many educators, as well as taxpayers, who have heard little or nothing about it. Only a few (actually about 50) of these channels have been applied for. Some commercial broadcast interests in the country are opposed to the whole idea of the public owning its own stations. They base their opposition on such arguments as: TV is a mass media and should appeal only to large audiences; TV is showbusiness and educators have no showmanship; educators tried radio and failed. But of more immediate interest, both to them and ourselves, is the fact that each TV channel may well be worth anything from 100,000 to several million dollars to the persons or corporations that own it, depending on its nearness to well-populated and marketable areas.

Let's look at the box score. As of early November, 50 communities had filed requests with the FCC for construction permits; fund raising efforts were underway in 70 communities; while "something was being done in one way or another" in 57 others. This still left 90 of the 242

Jim Miles is Director of Station WBAA at Purdue University. Credit for assistance in the preparation of this article is due Robert S. McMahon, Producer at WBAA.

channel locations unheard from. In the past few months action has been taken that has put some of these channels in jeopardy. One of the nation's largest southern cities has already found itself in the middle of a precedent-setting battle. This battle began when a commercial interest tried to garner for its own use a channel reserved for education. Luckily for educational television hopefuls in New Orleans, Louisiana, the first shot fired in anger has, for the time being, sailed over their heads without doing any damage. The petition to delete the educational TV reservation was denied on August 27th by the Federal Communications Commission. The FCC decided that no "compelling reasons" were advanced by the petitioner as to why the FCC should change the basic policy which led it to establish the educational reservations, and that "substantial progress" had been made by the Greater New Orleans Educational Television Foundation in its efforts to establish a station. Such nation-wide organizations as the National Association of Radio and Television Broadcasters, the Joint Committee for Educational Television, and the National Citizens Committee for Educational Television became involved in the matter, and upon the outcome of this one incident could well depend the future progress and effective use of all educational channels. Altho the first skirmish has been a victory for education, the battle itself is not over yet, for the Commission has expressly stated that the outcome of this one case can by no means be taken as a definitive statement of its future policy toward the 242 channels.

In the meantime, there will be other occurrences of equal or perhaps even greater importance to educators, among them the case histories of the educational TV stations that are already broadcasting at Houston, the University of Southern California, and Iowa State College. Questions will be asked and these stations will have to supply the answers. Such questions as: How wisely and well have you utilized your time on the air? How effectively have you presented your programs? Have you succeeded in reaching the people that you were trying to reach?

The continuing efforts of education in spots where little or no action has been taken to date will come up for scrutiny. Regardless of how much talking has been done, how many words have been written, the fact remains that up to the present time only about 50 communities actually made application for TV channels. There are still 200 more that could be lost. While the "deadline" has had a very salutary effect upon many of us, it must be admitted that educators by nature are a rather volatile group and some may be influenced to give up what seems to be a losing fight. Others are not yet convinced of the possibilities of television as a medium of education. Some, after all these years, have just begun to realize the potentialities of radio as an inschool service. Many of their pupils, however, are already spending as much as 25 to 30 hours a week

before a television screen, and they are learning all the time they are watching and listening. But are they learning what they need to know? Is their present television service helping them to become better citizens?

The 1949 Educational Broadcasting Seminar stated that: "Radio, like transportation is neither good nor evil—it totally depends on the uses to which it is put." This is equally true of television. Perhaps you prefer the idea that TV is a facility, and like other facilities of educators—buildings, for example—the program developed in or on that facility is all important.

The development of this program seems to depend on two things:—(a) all-out cooperation with other educational broadcasters, and (b) belief in simple, sequential type programs.

Regarding the first, the NAEB Tape Network, which has developed a national service for noncommercial radio, is serving as the pattern which may be followed by various organizations to provide an identical service for television. We can expect the continuation and further development of such organizations as JCET and NCCET. The results of the research efforts of the American Council on Education Committee on Television will be helpful. Most important of all program-wise may be the new Educational Television and Radio Center, supported by the Ford Foundation, which is expected to provide the nucleus of television network exchange programs to implement and broaden the scope of locally produced programs over educational TV stations.

Regarding the second, can we afford programs that are pre-edited, post-edited, and turned out à la Hollywood style, or will we prepare simple programs, sequential in nature, timeless, re-usable, and especially prepared to reinforce all areas of education. The former would certainly cost a great deal more and there would be fewer of them. The experiments made at Western Reserve University, Iowa State College, and the University of Michigan have shown us that good programs, in quantity, can be produced with a relatively small budget.

Education needs to develop its own methods—methods not based on a commercial scale consuming large quantities of material in a small amount of time, but based rather on sound education and original ideas and approaches to the problem, done effectively in a simple, straightforward, candid manner.

THE NAEB TAPE NETWORK

In the early 1920's educators began dreaming about the potentialities of mass education by radio. In 1925, Herbert Hoover, then Secretary of Commerce, helped to form an organization to develop a system to use

radio for education. The depression which came along just four years later put an end to many of these plans, but what was left of the original cadre, feeling the need for a stronger association, in 1934 formed the National Association of Educational Broadcasters.

This organization existed for many years as a focal point for the exchange of information among educational broadcasters. It supplied much of the information which led the Federal Communications Commission to set aside 20 percent of the FM channels for educational purposes immediately after World War II.

These FM channels gave added weight and emphasis to educational broadcasting in the United States. During the summer of 1949 at the Allerton House Seminar, broadcasters got together to further define the aims and responsibilities of educational broadcasting before setting out with an expanded program. From this seminar and a subsequent one in 1950, both made possible by Rockefeller Foundation grants, came the idea of the NAEB Tape Network.

The NAEB Tape Network actually began in January 1950, when the series, "We Human Beings," was offered to 19 stations. WNYC, New York City, provided the impetus and the mechanics for the first year of the Network. When the Network moved its headquarters to the University of Illinois in January 1951, there were 41 member stations participating in the service. The average monthly production of tapes was 17 reels and the average monthly air time was 118 hours.

As soon as the Tape Network was formed, broadcasters determined to seek outside support to help them get started. The Kellogg Foundation was approached to supply aid, and the Fund for Adult Education made a grant to NAEB for the production of several series of distinguished radio programs.

In June 1951, Kellogg Foundation funds were made available not only to adequately establish and support the Tape Network, but also to carry on the headquarters operation and all that it involved in conferences, seminars, personal help, and research. Within a few months the number of stations increased to 70.

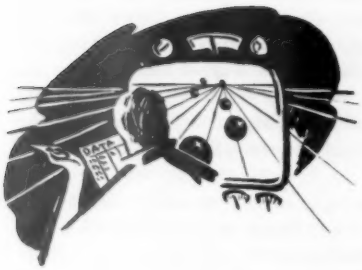
By January 1952, network production had increased to 1061 reels monthly and its average monthly air time was up to 1231 hours. The Tape Network had offered 73 regular series of programs, plus 12 extra series of individual programs, totaling 904 programs in all. These had been obtained from a wide variety of sources, including various universities and public service agencies at home and abroad, the BBC, the CBC, government agencies and private foundations. An effort was made to select programs of continually higher quality. Program acceptance committees were put in operation to establish and maintain policies and evaluative criteria for maintenance of the network.

On July 4, 1952, a mass duplicator, making it possible to produce 11 copies from a master tape on each run-thru, arrived at headquarters, enabling operators to raise the amount of tapes produced and distributed to more than 900 weekly, thus permitting them to start a system of direct distribution of tapes to each member station. At the same time the Big Four series of the Fund for Adult Education Project was ready to take to the air waves. The "Jeffersonian Heritage," "Voices of Europe," "People under Communism," and "Ways of Mankind" were carried on all member stations. These programs undoubtedly went far in establishing the eminence of the NAEB Tape Network.

In addition to operating the Tape Network, NAEB headquarters has used its Kellogg funds to make a series of meetings possible. These ranged from special meetings of the various working committees to regional meetings in three of the six NAEB regions, and to a full seminar in school station operation and problems.

As annual funds from the Kellogg Grant decrease, member stations will undertake to pay a substantial annual assessment fee which will enable the network eventually to be self-supporting. Even this fee, as important as it is to the operation, will not amount to more than $2 an hour for programs used on Class A stations (those of 5 kw or more power) and will be proportionately less for smaller operations.

Today more than 100 noncommercial stations in the United States are members of this organization, and the network exists as the fifth largest radio network in our land. It has provided and will continue to provide the residents of much of the country with a truly alternative radio service.



RESEARCH ABSTRACTS

MOTION PICTURES

COGSWELL, JOHN F. **"Effects of a Stereoscopic Sound Motion Picture on the Learning of a Perceptual-Motor Task."** Technical Report No. SDC 269-7-32, Instructional Film Research Program, The Pennsylvania State College. Port Washington, L. I., N. Y.: Special Devices Center, 1952.

Purpose: To investigate the effects of stereoscopic film presentation in the learning of a perceptual-motion task. Specifically, does a stereoscopic presentation produce learning gains over conventional projection? Does the wearing of polaroid spectacles alter the learning pattern?

Procedure: A 10-minute film on the breach-block assembly was shown to 321 soldiers under three conditions. One group viewed a 3-D film thru polaroid glasses. Another group viewed a "flat" version thru polaroid glasses while a third group viewed this same flat version without polaroid glasses. A postfilm assembly test was given to all subjects.

Results: No significant learning differences were evidenced by the test given to the groups. The report concludes "that the 3-D effect did not improve learning and may have distracted the viewer because of its novelty. This finding confirms the hypothesis that exact stimulation is not a prerequisite for effective training"—*Edmund Faison.*

HARBY, S. F. **"Evaluation of a Procedure for Using Daylight Projection of Film Loops in Teaching Skills."** Technical Report No. SDC 269-7-25, Instructional Film Research Program, The Pennsylvania State College. Port Washington, L. I., N. Y.: Special Devices Center, 1952.

Purposes: To determine effectiveness of: (a) film loop demonstrations projected in daylight as compared with demonstrations by a live instructor, (b) demonstrations when interspersed with practice, (c) practice with and without coaching.

Procedure: Four physical education classes were employed in two substudies. In substudy A massed vs. interspersed showings, and movie vs. live instruction were compared in a balanced design. In substudy B, coaching vs. no coaching, and required film viewing vs. free choice were compared on the same four classes used in substudy A. Eight tumbling exercises were demonstrated in the complete experiment (four in each substudy). Two minute sound motion pictures were prepared to demonstrate each of the eight tumbling skills by use of loop-projection.

Results: Daily and final performance ratings of the tumbling skills indicated that: (a) A motion picture demonstration is at least as effective as a live instructor's demonstration. (b) Demonstrations interspersed with practice may be slightly superior to massed demonstrations. (c) Regulated interspersion of movie demonstrations and practice appears somewhat more effective than the free choice of the learner to view the films as he wishes. (d) Coaching during practice makes a significant contribution to the learning of athletic skills. However, the results show that a fair level of proficiency in skills can be taught without instructors. —*Edmund Faison*

HIRSCH, RICHARD S. "The Effects of Knowledge of Test Results on Learning of Meaningful Material." Technical Report No. SDC 269-7-30, Instructional Film Research Program, The Pennsylvania State College. Port Washington, L. I., N. Y.: Special Devices Center, 1952.

Purpose: To discover how knowledge of results could be applied to improve learning from films.

Procedure: The experimental design consisted of a latin square employing six groups of subjects, six different films, and six methods of presenting knowledge of results. The six methods concerning knowledge of results were: (a) no knowledge of results; (b) light flashing on when answer is correct (thus when an incorrect answer occurs, subject knows choice was wrong, but does not learn which choice was correct one); (c) light flashing on informing all subjects of correct answer choice after question has been removed from screen; (d) question is repeated on screen with only correct answer choice appearing; (e) same as (d) but with a second showing of the film immediately following; (f) control for method (e) by showing film twice with no knowledge of results. Posttesting was employed immediately after the showing of the films and again at the end of three weeks.

Results: (a) Knowledge of test results given item by item aided retention of test material. (b) Knowledge of test results which took the form of a repetition of each question with its correct answer (method d) was the only method which did not show any loss of retention on the delayed posttest. (c) When knowledge of test results which took the form of a repetition of each question with its correct answer was coupled with a second showing (method e), not only was retention aided but some learning gain occurred on the delayed posttest.—*Edmund Faison.*

KIMBLE, G. A. and WULFF, J. J. "The Effects of 'Response Guidance' on the Value of Audience Participation in Training Film Instruction."

Human Factors Operations Research Laboratories, U. S. Air Force, Report No. 35.

Purpose: It is known that the amount learned from films can be increased markedly by the incorporation of "audience participation" procedures, which allow the pupil to practice while being taught. This study investigates whether pupils learn more if they are given guidance during participation to foster correct practice than if they are left to try to achieve correct performance without such guidance.

Procedure: Two versions of a sound film teaching the use of the slide rule were prepared. In version A aids to the performance of correct participation responses were used. Version B was identical in content except for the omission of guide cues in the sound and picture leading to the correct response. Over 300 Air Force basic trainees were shown each of the two films and then tested.

Results: Results of the postfilm tests indicate that the guided practice was reliably superior to the unguided-practice procedure, especially for more difficult material. The superiority held when men were later tested on new examples not previously practiced, and was found for results of both more intelligent and less intelligent segments of the trainee population.—*Edmund Faison*

STEIN, J. J. "The Effects of a Pre-Film Test on Learning from an Educational Sound Motion Picture." Technical Report No. SDC 269-7-35, Instructional Film Research Program, The Pennsylvania State College. Port Washington, L. I., N. Y.: Special Devices Center, 1952.

Purpose: To determine the effect of a prefilm test on learning from an educational sound motion picture.

Procedure: The effect of a prefilm test was investigated for two different films: *Weather* and *Measuring Instruments*. Several kinds of prefilm tests were employed. There were tests which presented the information in the same order as that in the film vs. those which employed a scrambled order. In some tests the items were identical with the postfilm test items; on others, the items were comparable but not identical. Some tests were administered in such fashion that the subjects knew when they had made a wrong answer (partial knowledge of results); in other tests the subjects learned when a wrong answer was made and also learned the correct answer (complete knowledge of results); finally, some tests were administered in the standard fashion such that the subject had "no knowledge of results." These prefilm test conditions were compared by means of a posttest which was given immediately following one or two showings of one of the films and administered again one week later.

Results: The prefilm test, with identical, sequentially-ordered items employing complete knowledge of results, immediately followed by a film, produced significantly greater learning and retention than any other combination investigated, whether the film was shown once or twice. This result holds true for both the lower and upper ranges of intelligence and for both one and two film showings. No other experimental treatment differed significantly from any other. —*Edmund Faison*

TELEVISION

INTERNATIONAL BROADCASTING SERVICE. "Status of International Television, Interim Report of July 1, 1953." Television Development Branch, International Broadcasting Service. New York. 53 p. Dittoed.

This brief but interesting report consists of data on the status of television in 50 foreign countries. As information is held almost completely to figures and terse comments, some study is necessary to get a maximum value out of the material presented.

The report consists of a summary, plus information presented by country arranged in alphabetical order. Data on each country is broken down under the headings: Standards, Estimated Number of Sets in Use, and General Status Details.

Perhaps the most important implication of the report concerns the growing importance of international television. In 1950, only five countries outside of the United States had television service. At that time, there were less than 500,000 sets in use, with an estimated viewing audience of 2 million.

At the end of 1953, there will be some 29 foreign countries with television service. Sets in use will be over 3 million. The estimated viewing audience will be between 25 million and 30 million.

Standards differences restrict the exchange of programs in some parts of the world. At least nine different standards are being used in international telecasting (according to the reviewer's count). Most countries in North and South America used the US standard. In Europe, the problem is much more severe. Belgium is perhaps the worst off, needing receivers which will receive any one of four standards, the two used in Belgium, plus two used in adjacent countries.

Great Britain is listed as having the largest number of sets in use, some 2,600,000. Other countries: Canada—400,000, Cuba—200,000, USSR—103,000, France—80,000, Mexico—75,000, and Brazil—70,000.

Viewing habits apparently vary considerably from those in the United States, as the report states that large numbers of people have access to TV thru community viewing. In some Latin American countries, this includes large screen projection sets installed in parks, vacant lots, and such places.

Cuba has the largest number of stations, a total of 10, with five in Havana alone. Great Britain has 7, covering an estimated 80 percent of the population. Other countries: Mexico—6, Brazil—4, and Canada and USSR—3.

Compared with over 250 stations and estimated 27 million sets in use in the United States, some of the figures in this report may seem rather small. However, they do provide a strong indication of the rapid growth and future importance of television in the field of international communication.—*E. G. Sherburne, Jr.*

LOUIS, R. "An Experiment in Community Reception of Television in French Villages." Clearing House Series No. 5, Department of Mass Communication, UNESCO. Paris 16e, France: 19 Avenue Kléber, August 1952. 11 p.

Purpose: To test the effectiveness and community acceptance of a program of collective community purchase of a television set and community viewing of the set in rural French villages.

Procedure: In each of 20 French villages a general meeting was held relative to the installation of a community television set; the set was subsequently installed in the school; an explanation was made regarding the proposed method of collective purchase (by the villagers) of the set; free admission was granted to the first three programs; and moderate entrance fees were charged for subsequent programs. The experiment was carried on for one year. Monthly reports were made by each of the village teachers, indicating the number viewing the programs, the composition of the audience, and the audience reactions to the programs.

Results: (a) In 40 percent of the villages the average number of viewers steadily increased; in 30 percent there were variations in attendance; in 20 percent the number hardly varied; and in 10 percent there was a slight decrease in attendance. (b) Working classes increased attendance, whereas well-to-do soon came less often. (c) In 10 percent of the villages the cost of the sets were paid off in 6 months; 30 percent in one year; 50 percent will have to wait two years; and 10 percent will need three years. (d) The experiment led to the establishment of an organization (The National Federation for Educational and Cultural Television) to undertake systematic equipping of all French village schools and cultural centers with TV sets for community use. (e) The experiment caused the French Television Service to consult this new organization relative to desirable programming for community use. (f) The telecasts led children to discover a whole series of new interests, with an increase in sports and hobby clubs and amateur dramatic societies. (g) The most significant effect upon the adult audience was to instil the habit of gathering around the TV set and discussing the programs. (h) The assembly of adults in the schoolhouse stimulated interest in the school and in school problems.—*William Allen*

TARBET, DONALD G. "Television and Current Affairs." *The American Observer* 22:2–3; February 23, 1953.

Purpose: To compare the achievement on current affairs tests between ninth grade students in TV and non-TV homes.

Procedure: Ninth grade students in the St. Louis and Kansas City areas were matched into 189 pairs on the basis of the presence or absence of a TV set in their homes and on six other factors. Two current affairs tests were used for measurement, administered 5 months apart. In addition, the entire groups (1382 on the first test and 1314 on the second test) were compared.

Results: (a) The means of the TV groups were higher than the means for the non-TV groups. Only on the first current affairs test for the matched pairs was the difference statistically insignificant. (b) More of the students of the TV groups made higher scores on the second current affairs test than on the first test, while more of the students of the non-TV groups made lower scores on the second test than on the first test. (c) The TV groups viewed TV 3.4 hours a day compared with about 14 minutes per day for the non-TV groups. (d) The TV groups viewed newscasts between 36 and 39 minutes per day as compared with about 3.5 minutes for the non-TV groups. (e) Both groups rated "news and current happenings" as fourth in their preference behind plays, variety shows, and sports, but ahead of education and demonstrations, and symphonies, concerts and military bands.—*William Allen*

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